U.S. Army Corps of Engineers
South Atlantic Division

Final

Building 19 Underground Storage Tank Area
Site Assessment Report
Former Lee Field Naval Air Station
Green Cove Springs, Florida

FUDS Project No. I04FL0085_14

In Support of
FUDS HTRW Program

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Certification

As a Professional Geologist in the State of Florida, I hereby certify that I have supervised the preparation of this report, in accordance with Florida Rules and Regulations as authorized by Chapters 492 of the Florida Statutes. I certify that I am a qualified environmental professional, with knowledge and experience in groundwater contamination assessment and remediation. To the best of my knowledge, the data and conclusions presented in this report are true, accurate, complete, based on applicable State Rules and Regulations.

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9-17-19
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List of Acronyms

ASCTL	alternative soil cleanup target level
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CB&I	CB&I Federal Services LLC
DoD	U.S. Department of Defense
DL	detection limit
DPT	direct-push technology
EPA	U.S. Environmental Protection Agency
F.A.C.	Florida Administration Code
FDEP	Florida Department of Environmental Protection
FL-PRO	Florida Petroleum Range Organics
FUDS	formerly used defense site
GCTL	groundwater cleanup target level
IDW	investigation-derived waste
IRA	interim removal action
LFNAS	former Lee Field Naval Air Station
LOD	limit of detection
LOQ	limit of quantitation
mg/kg	milligrams per kilogram
MTBE	methyl-tertiary-butyl-ether
PAH	polynuclear aromatic hydrocarbon
SA	site assessment
SCTL	soil cleanup target level
Shaw	Shaw Environmental, Inc.
SIM	single ion monitoring
SVOC	semivolatile organic compound
TEQ	toxicity equivalent
TPMC	TerranearPMC, LLC
TRPH	total recoverable petroleum hydrocarbons
USACE	U.S. Army Corps of Engineers
UST	underground storage tank
VOC	volatile organic compound

1.0 Introduction

This report presents the results of the site assessment (SA) for the Building 19 Underground Storage Tank (UST) Area within the former Lee Field Naval Air Station (LFNAS), Green Cove Springs, Florida. The LFNAS is a formerly used defense site (FUDS) within the U.S. Army Corps of Engineers (USACE) Jacksonville District; the designated FUDS project number for the Building 19 UST Area is I04FL0085_14. The Army is the lead agent for the program which the USACE executes on behalf of the Army and the U.S. Department of Defense (DoD) following the requirements set forth in USACE Engineering Manual ER 200-3-1, *FUDS Program Policy*. The USACE authorized CB&I Federal Services LLC (CB&I) (now Aptim Federal Services, LLC) to conduct the SA under Contract Number W912DY-10-D-0014, Task Order 0009.

1.1 Objective

Previous investigations at the Building 19 UST Area have identified impacts to soils and groundwater from contaminants consistent with the historical operation of a lubrication oil UST removed from the south side of Building 19. These include total recoverable petroleum hydrocarbons (TRPH) in soil and volatile organic compounds (VOC) such as toluene and naphthalene in groundwater. The presence of the VOC isopropylbenzene in groundwater, however, is not consistent with the operational history of the site. Isopropylbenzene is a component of high-octane aviation fuel. The objective of this SA is to obtain sufficient data to define the current nature and extent of DoD-related soil and groundwater contamination identified during the previous investigations as well as their likely source. Should additional actions be required, the data will be utilized in support of the remedial action plan, which will develop and evaluate remedial alternatives for the Building 19 UST Area site.

1.2 Site Description

The LFNAS occupies approximately 1,560 acres along the St. Johns River in Clay County, Florida, within the city of Green Cove Springs (Figure 1-1). Prior to acquisition by the U.S. Department of the Navy, the city of Green Cove Springs used the property as a civilian landing field although it reportedly received little use (PHR Environmental Consultants, Inc., 2001). The Navy acquired the property through a series of condemnation suits commencing in June 1940 (PHR Environmental Consultants, Inc., 2001). During World War II, the facility was used to train pilots. The property contained extensive docking facilities (with access to the St. Johns River), a railroad system, multiple aircraft runways, and supporting structures. Following the war, the facility was used as a naval station to store shallow-draft fleet ships. In 1963, the ownership of Lee Field was transferred from the DoD to the City of Green Cove Springs. In 1965, the City of Green Cove Springs sold the property to J. Louis Reynolds. Mr. Reynolds

began developing Lee Field into an industrial park property (Reynolds Industrial Park), and site development has continued. In 1981 Mr. Reynolds transferred the property to Clay County Port, Inc., a corporation that continues to operate the property as Reynolds Industrial Park. There are no known plans to change the present day use of the property. Businesses currently or formerly operating at Reynolds Industrial Park include a railroad refurbisher, a truck driver training school, an aircraft maintenance facility, a brake testing facility, a fiberglass pipe manufacturing facility, and an airstrip for small planes (USACE, 1999).

The Building 19 UST Area is located in the north-central portion of the LFNAS at 965 Bunker Avenue (Figure 1-2). Building 19 was constructed in 1942 as an aircraft hangar, but was used extensively by engineering maintenance during the active years of the LFNAS. Building 19 also housed a carpentry shop, storerooms, and offices. A 500-gallon UST, used to store fresh lubrication oil, was located in a grassy area south of Building 19. The UST was installed by the Navy and used extensively by the DoD. The UST has not been used by subsequent owners (USACE, 2011).

Immediately following World War II in November 1945, LFNAS was recommissioned for the "accommodation of vessels of the inactive U.S. Naval fleet." Building 19 was quickly converted from an airplane hangar into a warehouse for shipboard supplies and construction equipment. A 1960 military construction report noted that Building 19 was also utilized for organized recreational programs, driver training, and auxiliary generator storage during post-war operations (PHR Environmental Consultants, Inc., 2001). Post-DoD utilization of Building 19 as part of Reynolds Industrial Park included a vehicle maintenance facility, a composite pipe manufacturing facility, and a framing company.

1.3 Report Organization

The remainder of this report is organized as follows:

- Chapter 1.0, Introduction
- Chapter 2.0, Summary of Previous Investigations
- Chapter 3.0, SA Activities
- Chapter 4.0, Investigation Results
- Chapter 5.0, Conclusions and Recommendations
- Chapter 6.0, References
- Appendix A – Historical Soil and Groundwater Analytical Results
- Appendix B - Field Instrument Calibration Records
- Appendix C – Sample Collection Logs
- Appendix D – Well Construction and Development Logs

- Appendix E – Data Validation Package and Data Quality Review
- Appendix F – Survey Data
- Appendix G – Approval to Use of Benzo(a)pyrene Alternative Soil Cleanup Target Levels (SCTL).

2.0 Summary of Previous Investigations

This chapter presents a brief summary of the previous investigations conducted at the Building 19 UST area. Historical sampling locations are shown on Figure 2-1. Historical soil and groundwater analytical results are presented in electronic format in Appendix A.

2.1 1993 Phase II Environmental Investigation

In 1993, The Payne Firm, Inc. conducted a Phase II environmental investigation for the Price Brothers Inc. Composite Pipe Facility at LFNAS, which included Building 19 (The Payne Firm, Inc., 1994). During the investigation, a UST was identified south of Building 19. Environmental samples were not collected in the vicinity of the UST.

2.2 2005 Interim Removal Action

The UST at Building 19 was removed in January 2005 during an interim removal action (IRA) completed by Shaw Environmental, Inc. (Shaw) under contract to the USACE. The interim removal action is summarized in the Final Building 9 and 19 UST IRA Report (Shaw, 2005). A total of three confirmation soil samples were collected from the Building 19 UST excavation. Initially, two confirmation soil samples were collected directly above the water table at approximately 4 feet below ground surface (bgs). The samples were analyzed for polynuclear aromatic hydrocarbons (PAH) using U.S. Environmental Protection Agency (EPA) Method 8310 and TRPH using the Florida Petroleum Range Organics (FL-PRO) Method. PAHs were not detected in either sample. TRPH was detected in one sample at a concentration exceeding the SCTLs for leachability based on groundwater criteria of 340 milligrams per kilogram (mg/kg) and residential direct exposure SCTL of 460 mg/kg. The south wall of the former tank pit was over-excavated and an additional confirmation soil sample was collected and analyzed for TRPH; the TRPH concentration detected in the additional sample also exceeded the SCTL. Because of the presence of contaminated soil in excess of the SCTLs, a discharge reporting form was submitted to the Florida Department of Environmental Protection (FDEP).

A groundwater sample was collected from a temporary monitoring well, UST19-TMW-19, installed within the excavation and analyzed for PAHs using EPA Method 8310 and TRPH using the FL-PRO Method. Three PAHs (naphthalene, 1 methylnaphthalene, and 2-methylnaphthalene) and TRPH were detected; however, none of the concentrations exceeded their respective groundwater cleanup target level (GCTL).

The IRA report recommended additional excavation to remove the remaining TRPH-contaminated soil, collection of additional confirmation soil samples from the south side of the

excavation, and the collection of an additional groundwater sample from the temporary monitoring well.

2.3 2006 Supplemental Excavation

In 2006, Shaw, under contract to the USACE, performed the additional excavation and groundwater sampling activities recommended in the IRA report. These activities are summarized in the Supplemental Excavation Report (Shaw, 2006). Two confirmation soil samples were collected from the excavation after the soil removal along the southern wall was completed and analyzed for TRPH using the FL-PRO Method. TRPH concentrations in these samples were reported as 13.4 and 16.4 mg/kg, respectively. These concentrations are below the residential direct exposure SCTL (460 mg/kg), industrial SCTL (2700 mg/kg), and leachability to groundwater SCTL (340 mg/kg).

A groundwater sample was collected from temporary well UST19-TMW-19 and analyzed for PAHs using EPA Method SW8310 and TRPH using the FL-PRO Method. PAHs were not detected in the sample, and the concentration of TRPH was less than the GCTL. During well purging, however, petroleum sheen was observed on top of the water table in the temporary well.

The FDEP reviewed the Supplemental Excavation Report and based on subsequent discussions and comment responses no further remedial action for soil was required. In their May 2007 review comments, FDEP recommended the gauging of the temporary well for the presence of measurable free product and the collection of a groundwater sample to be analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) with methyl-tertiary-butyl-ether (MTBE), TRPH, and PAHs as specified in Table C, *Gasoline and Kerosene Analytical Groups*, of the Florida Administrative Code (F.A.C.) Chapter 62-780.

2.4 2007 Supplemental Sampling

The USACE contracted Shaw to perform the additional site activities recommended by FDEP as presented in the August 2007 Supplemental Sampling Report (Shaw, 2007). A groundwater sample was collected from temporary well UST19-TMW-19 and analyzed for BTEX with MTBE using EPA Method 8260B, PAHs using EPA Method 8310, and TRPH using the FL-PRO Method. BTEX, MTBE, and PAHs were not detected in the sample; the concentration of TRPH was less than the GCTL. Petroleum sheen, approximately 1.5 millimeters (0.005 feet) in thickness, was observed in the bailer used to purge the well. However, subsequent measurements using an interface probe were negative for measurable free product, which is defined in the F.A.C. as non-aqueous phase liquid in the environment greater than 0.01 foot in thickness. Based on the lack of GCTL exceedances or measurable free product, “No Further Action” was recommended for the Building 19 UST Area site.

In their February 2008 comments, FDEP did not concur with the "No Further Action" recommendation. Due to the age of the temporary monitoring well and because the top of the screened interval did not extend above the static water table, as required for the assessment of free product at the time of sampling, FDEP recommended the installation, gauging, and sampling of a permanent monitoring well. The review comments also laid out decision-making pathways for additional SA activities. These included at a minimum documenting the presence or absence of measurable free product in the replacement well and analyzing a groundwater sample for BTEX with MTBE, TRPH, and PAHs if no measurable free product was observed. Other activities included additional horizontal delineation if observed contaminant levels exceeded GCTLs. In the event measurable free product were discovered, or if dissolved contamination in excess of the Natural Attenuation Default Source Concentrations as specified in Table V, F.A.C. Chapter 62-777 was detected, additional sampling and vertical delineation could be required.

2.5 2009 Supplemental Site Assessment

In response to comments received on the Supplemental Sampling Report, additional SA activities were conducted in 2009 by TerranearPMC, LLC (TPMC) under contract to the USACE. These findings and results of these activities are summarized in the Supplemental SA Addendum/No Further Action Proposal (TMPC and Shaw, 2009). Temporary well UST19-TMW-19 was replaced with permanent monitoring well UST19-MW01. Prior to the collection of groundwater samples, the monitoring well was checked for the presence of measurable free product and none was observed. A groundwater sample was collected and analyzed for BTEX with MTBE using EPA Method 8260B, PAHs with phthalates using EPA Method 8270C, and TRPH by the Florida FL-PRO Method. The addition of phthalates to the analytical suite was at the request of FDEP. Because some reporting limits for VOCs exceeded GCTLs, the well was resampled in November. This sample was analyzed for Target Compound List VOCs by EPA Method 8260B and ethylene dibromide by EPA Method 8011.

The analytical results from the sampling events indicated the presence of bis(2-ethylhexyl)phthalate and isopropylbenzene exceeding their respective GCTLs but less than the Natural Attenuation Default Source Concentrations. No other constituents were detected at concentrations exceeding the GCTLs.

FDEP provided review comments on the Supplemental Sampling Report in January 2010. The site was determined to be contaminated as defined by the F.A.C. and that additional assessment activities may be warranted to determine an appropriate path forward for the site. Because bis(2-ethylhexyl)phthalate and isopropylbenzene were detected at concentrations above their

respective GCTLs but below the natural attenuation levels, FDEP requested additional sampling for these compounds.

2.6 2011-2012 Supplemental Site Assessment

Additional SA activities were performed in 2011 and 2012 with the objective of further defining the extent of contamination associated with the former lubrication oil tank removed from the south side of Building 19. These activities were conducted by TPMC under contract to the USACE as a supplement to the work performed in 2009. Results of the 2009 work indicated previously unidentified contamination, specifically isopropylbenzene, was present in groundwater at the Building 19 UST Area site that warranted further investigation.

2011 Supplemental SA. Activities conducted in 2011 included the collection of groundwater samples from 10 borings using direct-push technology (DPT), the installation of three permanent monitoring wells, and the sampling of one existing and three newly installed wells. Screening-level groundwater samples collected from the DPT borings were analyzed for VOCs by EPA Method 8260B. Samples from the monitoring wells were analyzed for VOCs by EPA Method 8260B, 1,2-dibromoethene by EPA Method 504.1, semivolatile organic compounds (SVOC) by EPA Method 8270D with low detection level analyses of PAHs using single ion monitoring (SIM), and TRPH using the FL-PRO Method (TPMC and Shaw, 2013).

Ethylbenzene, isopropylbenzene, and naphthalene were detected in one or more screening level groundwater samples collected from three of the DPT borings. Of these, only isopropylbenzene was found to be present at concentrations greater than the GCTL of 0.8 micrograms per liter. Based the analytical results from the DPT locations, the three permanent monitoring wells were installed.

Several VOCs, including benzene, ethylbenzene, isopropylbenzene, naphthalene, and toluene, were detected in one or more groundwater samples collected from the monitoring wells. The concentration of isopropylbenzene exceeded the GCTL in two samples, naphthalene in one sample, and toluene in two samples. SVOCs were detected in samples collected from two of the four monitoring wells; however, none of the detected concentrations exceeded their respective GCTLs. TRPH was detected in samples collected from three of the monitoring wells at concentrations less than the GCTL.

2012 Supplemental SA. Activities conducted in 2012 included the collection of groundwater samples from the four groundwater monitoring wells. The samples were analyzed for VOCs by EPA Method 8260B, SVOCs by EPA Method 8270D with low-level PAHs using SIM, and TRPH using the FL-PRO Method (TPMC and Shaw, 2013).

Isopropylbenzene was detected at a concentration exceeding the GCTL in two samples, although the concentrations were lower than those observed in the 2011 samples. SVOCs, including PAHs, were not detected in any of the samples. TRPH was detected in one sample, but at a concentration less than the GCTL.

In their January 2014 review comments, FDEP noted that the variance for ethylene dibromide analysis by 8260B was understandable. If new source areas were identified then some sampling for ethylene dibromide using an approved method (62-780, Table C, F.A.C.) would be warranted. No changes or additions to the groundwater analytical program were specifically requested by FDEP.

Conclusions and Recommendations. The presence of isopropylbenzene in conjunction with the absence of constituents typically associated with lubrication oils, such as chrysene, pyrene, or phenanthrene, suggest that the groundwater impacts observed at the Building 19 UST Area site are unrelated to the historical operation of a lubrication oil UST removed from the south side of Building 19 in 2005. The most commonly detected contaminant exceeding GCTLs in groundwater at the site is isopropylbenzene, which is a component of high-octane aviation fuel. A remedial action is currently underway at the adjoining Service Pit Area site to address aviation fuel related contamination in soil and groundwater.

Overall, groundwater contaminants were detected less often and at lower concentrations in 2012 as compared to 2011. The Supplemental SA Report recommended the installation of a limited number of groundwater monitoring wells and additional sampling to facilitate assessment of the observed reduced contaminant concentrations and to identify a likely source of the fuels-related groundwater contamination (TPMC and Shaw, 2013).

3.0 Site Assessment Activities

During the current SA, soil and groundwater were obtained along with other data necessary to complete the SA process. The data were used to characterize the current nature and extent of contamination in site media. SA field activities were completed from August to September 2016.

All work was completed in general accordance with the methods described in the work plan (CB&I, 2016). Sections 3.1 through 3.10 briefly describe the field activities and the rationale for sample selection, discuss the methods used, and list any variances or deviations from the work plan. Except as required to explain sampling rationale, discussion of findings is deferred until later chapters.

3.1 Surface and Subsurface Soil Sampling

Based on a review of the information from the previous SA addendums, surface (0 to 0.5 foot and 0.5 to 2 feet) and subsurface (>2 feet) soil samples were collected from 12 soil boring locations (B19SO-01 through B19SO-12) according to the procedures described in the SA work plan (CB&I, 2016). These data were primarily used to assess the presence or absence of contaminants in soil in areas previously investigated using incomplete or inconsistent analytical methodologies.

Sample intervals included 0 to 0.5 foot, 0.5 to 2 feet, and 2.0 to 4.0 feet bgs (or first encountered groundwater). All surface and subsurface soil samples were field screened for the presence of organic vapors using a hand-held photoionization detector. Field instrument calibration logs are provided in Appendix B.

All samples were analyzed for VOCs by EPA Method 8260B, SVOCs by EPA Method 8270C, PAHs by EPA Method 8270C, low-level) PAHs by SIM, and TRPH by FL-PRO. Sample collection logs are provided in Appendix C. All surface soil sampling was performed consistent with Florida DEP-SOP-001/01 FS 3000 (*Soil)* and DEP-SOP-001/01 FD 1000 (*Documentation Procedures*).

3.2 DPT Groundwater Sampling

Screening-level DPT groundwater samples were collected at eight locations (B19HP-01 through B19HP-08) from a depth of 10 to 12 feet bgs according to the procedures described in the SA work plan (CB&I, 2016). These data were primarily used to assess the presence or absence of contaminants in groundwater in areas previously investigated using incomplete or inconsistent analytical methodologies.

Groundwater samples were collected using standard DPT methods. An assembled tool string, consisting of probe rods, 2-foot screen, and outer casing, were advanced to a depth of 12 feet bgs. The outer casing was then retracted, exposing the screen. Prior to sampling, each location was purged until water clarity improved and at least approximately one pipe volume of water had been removed. Purging and sampling was accomplished using Teflon®-lined tubing and a peristaltic pump. The boreholes were abandoned once the groundwater samples were collected using hydrated bentonite pellets.

All samples were analyzed for VOCs by EPA Method 8260B, SVOCs by 8270C with low-level PAHs by SIM, and TRPH by FL-PRO. Sample collection logs are provided in Appendix C.

3.3 Monitoring Well Installation and Development

Two shallow monitoring wells (UST19-MW05 and UST19-MW06) and one deep monitoring well (UST19-MW07) were installed (Table 3-1). The data from these wells were used to delineate the current nature and extent of contamination in groundwater. The two shallow monitoring wells were installed to a total depth of 12 feet bgs while the deep monitoring well was installed to a total depth of 35 feet bgs. Boreholes for the monitoring wells were advanced using DPT methods. The shallow wells were constructed using 1-inch-inside diameter, Schedule 40 polyvinyl chloride well materials, with 0.010-inch factory slotted prepacked screens. Shallow wells were constructed using 10-foot screens; the deep well was constructed using a 5-foot screen.

Wells were constructed in accordance with USACE EM 1110-1-4000, *Monitoring Well Design, Installation, and Documentation at Hazardous, Toxic, and Radioactive Waste Sites* and the FDEP *Monitoring Well Design and Construction Guidance Manual*. Additionally, well placement conformed to the requirements of *Design, Installation, and Placement of Monitoring Wells*, FDEP Standard Operating Procedures PCS-006. An annular seal was formed above the filter pack with either fine sand or bentonite pellets. For the shallow wells, a layer of fine sand was emplaced to bring the annular materials to within 0.5 foot of ground surface. A cement grout, sufficiently viscous to prevent significant penetration into the fine sand, was then used to seal the borehole. For the deep well, a bentonite seal approximately 3 feet thick was emplaced on top of the filter pack. The remaining annulus was then grouted continuously from the top of the hydrated bentonite seal to ground surface. All wells were completed with flush-mount protective manholes and covers.

Each well was developed following the procedures described in the SA work plan (CB&I, 2016). Each new monitoring well was developed consistent with USACE EM 1110-1-4000, *Monitoring Well Design, Installation, and Documentation at Hazardous, Toxic, and Radioactive Waste Sites*

and the FDEP *Monitoring Well Design and Construction Guidance Manual* requirements. Wells were developed by pumping and surging. Generally, development continued until the following conditions were met:

- Water was clear to the unaided eye, free of sand, and free of drilling fluids.
- Thickness of the accumulated sediment in the well was less than 5 percent of the length of the well screen.
- Temperature, pH, turbidity, and specific conductance values had stabilized.
- A volume of water equal to five times the volume of standing water in the well and annular space had been removed from the well.

Monitoring well construction and development logs are included in Appendix D.

3.4 Monitoring Well Purging and Groundwater Sampling

Groundwater samples were collected from the three newly installed and four existing monitoring wells. The data were used to define the current nature and extent of groundwater contamination at the site, to facilitate assessment of the observed reduced contaminant concentrations, and to identify a likely source of the fuels-related groundwater contamination. Well purging and sample collection followed the methods described in the SA work plan (CB&I, 2016). Monitoring well purging and sample collection methods from monitoring wells at the LFNAS were consistent with Florida DEP-SOP-001/01 FS 2200 and DEP-SOP-001/01 FD 1000 (*Groundwater Sampling and Documentation*). The wells were purged using a peristaltic pump until the water level stabilized, then a minimum of one well volume was removed prior to collecting water quality parameters (pH, temperature, conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential). Purging continued until the parameters stabilized within the ranges described in the work plan. The groundwater samples were also collected using a peristaltic pump. All samples were analyzed for VOCs by EPA Method 8260B, SVOCs by 8270C with low-level PAHs by SIM, and TRPH by FL-PRO. Sample collection logs are provided in Appendix C.

3.5 Sample Preservation, Packaging, and Shipping

All sample custody and tracking procedures, including laboratory notification, field custody procedures, identification, and shipping, were performed as specified in the SA work plan (CB&I, 2016). Upon collection, each sample container was labeled, sealed in a plastic bag, and placed in an ice-cooled cooler. A chain-of-custody form was generated on-site. Samples were packed in coolers, chilled to 2 to 6 degrees Celsius, sealed with signed and dated custody seals on the outside of the coolers, and shipped via overnight courier to the laboratory.

3.6 Laboratory Sample Analyses

During the SA, environmental samples were collected and analyzed as summarized in Table 3-2. Field quality control samples collected during this effort included rinsates, field blanks, and field duplicates. Quality assurance split samples were also collected.

All regular and quality control samples were analyzed off site by Gulf Coast Analytical Laboratories, and all quality assurance split samples were analyzed off site by Eurofins Lancaster Laboratories. Both laboratories used the prescribed EPA methods and procedures in accordance with the DoD Quality Systems Manual, Version 5.0. Detailed procedures are outlined in Appendix F of the SA work plan.

All sample shipments were accompanied by continuous chain of custody using standard analysis request/chain-of-custody forms. These forms provided project-specific analytical specifications and quality control instructions to the laboratory.

3.7 Data Validation

A Level IV data validation was performed for all of the samples collected during the SA. The complete data validation package and data quality review is presented in electronic format in Appendix E. The data validation package includes copies of the analytical request and chain-of-custody documents and the sample analysis data sheets (Form 1s). The overall results of the analyses suggest that representative samples were collected and analyzed and that the data appear to be accurate and representative of site conditions at the time of sampling. As a result of the data validation and technical quality review, the data have been determined to be usable for their intended purpose.

3.8 Land Surveying

The locations of the monitoring wells installed as part of the SA were acquired by Gustin, Cothern and Tucker, Inc., a Florida licensed professional surveyor, in accordance with the methods described in the SA work plan (CB&I, 2016). The locations are defined with horizontal coordinates referenced to the North American Datum of 1983. Top-of-casing and well pad elevations are referenced to the National Geodetic Vertical Datum of 1988. Elevations and coordinates are surveyed to the closest 0.01 foot. Survey data are provided as Appendix F. DPT soil boring and groundwater sample locations were established in the field by the field coordinator or site geologist using Global Positioning System technology.

3.9 Investigation-Derived Waste Management and Disposal

The SA activities generated development water, purge water, decontamination liquids, and other investigation-derived waste (IDW). All IDW was collected in steel 55-gallon drums. Each

container was marked showing the date of collection, the nature of the waste (e.g., solid or liquid, etc.), and the name and telephone number of the contact person. All drums were sealed to prevent leakage or introduction of contamination from external sources, and staged adjacent to the field office. The drum contents were characterized as nonhazardous and were transported for off-site disposal in accordance with all applicable regulations.

3.10 Deviations From the Work Plan

Two soil borings (B19SO-09 and B19SO-11) were planned to be located inside Building 19 adjacent to the outside wall. During SA field activities, it was discovered that the foundation for Building 19 extended to a depth below the water table. The boring locations were subsequently moved to a location immediately adjacent to the exterior of Building 19. This deviation does not affect the usability of the data obtained for making determinations regarding the nature and extent of contamination at the Building 19 UST Area site.

4.0 Investigation Results

As part of this SA, surface soil, subsurface soil, and groundwater samples were collected at the former Building 19 UST Area site and analyzed for VOCs, SVOCs by 8270C with low-level PAHs by SIM, and TRPH. A potable water well survey was also conducted and site monitoring wells were gauged to determine the depth to water and groundwater flow direction. Field data and analytical results from previous investigative and remedial reports were reviewed and the data from the previous reports were used to develop the SA work plan (CB&I, 2016.) Previous analytical results are discussed in Chapter 2.0 of this report and appropriate document(s) are referenced but are not included in the following data summaries.

All analytical results were compared to the applicable standards in accordance with FDEP regulations (FDEP, 2005). Soil contaminant concentrations were first compared to the lower of the default direct exposure residential SCTL or the leachability criteria based on groundwater listed in Table II, Soil Cleanup Target Levels, Chapter 62-777, F.A.C. Concentrations exceeding the lower of these criteria were then compared to commercial/industrial SCTLs, or in the case of benzo(a)pyrene, the commercial/industrial ASCTL. FDEP concurrence to use the benzo(a)pyrene ASCTL in lieu of the default SCTLs is included as Appendix G.

The total benzo(a)pyrene toxicity equivalent (TEQ) was also calculated for any sample where PAHs were detected. The resulting TEQ was then compared to the residential direct exposure ASCTL of 1.0 mg/kg, the industrial direct exposure ASCTL of 3.1 mg/kg, and the leachability based on groundwater ASCTL of 4.7 mg/kg. DPT and monitoring well groundwater analytical results were compared to groundwater criteria listed in Table 1, Groundwater and Surface Water Cleanup Target Levels, Chapter 62-777, F.A.C.

4.1 Soil Analytical Results

The following sections present the analytical results of surface and subsurface soils collected during the SA. Soil boring locations are shown on Figure 4-1. Soil analytical results are summarized in Table 4-1 and TEQ calculations are presented in Table 4-2.

4.1.1 Surface Soil Analytical Results

Twenty-eight surface soil samples, including four duplicates, were collected from 12 soil boring locations (B19SO-01 through B19SO-12). Several PAHs were detected in all of the samples; however, only benzo(a)pyrene was detected at a concentration exceeding the residential direct exposure SCTL (0.1 mg/kg). The exceedances were reported in samples collected from locations B19SO-01 (XB001) and B19SO-06 (XB0018) at concentrations of at 0.228 mg/kg and

0.219 mg/kg, respectively. These concentrations, however, do not exceed either the industrial SCTL (0.7 mg/kg) or the leachability to groundwater SCTL (8 mg/kg). Additionally, the TEQ did not exceed the residential ASCTL in any of the samples where PAHs were detected (Table 4-1). The reported results are also less than the commercial/industrial ASCTL (3.1 mg/kg) and the alternative leachability criteria (4.7 mg/kg).

Similarly, several SVOCs were detected one or more times in twenty surface soil samples collected from each of the 12 soil boring locations. In all instances, the detected concentration of these constituents was less than their respective residential, industrial, or leachability to groundwater SCTL.

TRPH was reported in soil samples collected from locations B19SO-03 (XB0009) and B19SO-04 (XB0012) at an estimated 11 mg/kg and 11.1 mg/kg, respectively. These concentrations are less than the residential direct exposure SCTL (460 mg/kg), industrial SCTL (2700 mg/kg), and leachability to groundwater SCTL (340 mg/kg). TRPH results in the remaining surface soil samples were reported as non-detect ("U" qualifier) at the limit of detection (LOD).

Multiple samples were diluted by the laboratory due to the presence of non-target background interference including surface soil samples at boring locations B19SO-03 (XB0008), B19SO-04 (XB0011), B19SO-08 (XB0024), B19SO-09 (XB0027), and B19SO-10 (XB0031 and XB0032). TRPH results for these samples were reported as non-detect at an elevated LOD, limit of quantitation (LOQ), and laboratory detection limit (DL). The elevated LOD was greater than the residential SCTL in the sample collected from the 0 to 0.5 foot interval of location B19SO-09 (2050 mg/kg) and the 0.5 to 2-foot interval from location B19SO-010 (480 mg/kg). The elevated LOD was also greater than the leachability to groundwater SCTL in each of the diluted samples referenced above. The LOD, however, did not exceed the industrial SCTL in any of the laboratory diluted samples; and the laboratory did not detect TRPH above the DL, which was below the leachability to groundwater screening criteria, except for the sample collected from B19SO-09. This information is detailed in Table 4-3 and the laboratory data packages in Appendix E.

The VOC tetrachloroethylene was detected in one surface soil sample at a concentration less than the SCTL. There were no other detections of VOCs in the remaining surface soil samples.

4.1.2 Subsurface Soil Analytical Results

Thirteen subsurface soil samples, including one duplicate, were collected from 12 soil boring locations (B19SO-01 through B19SO-12) at a depth of 2 to 4 feet bgs. Several PAHs were detected in eleven of the samples, although none of the detected concentrations exceeded their

respective residential, industrial, or leachability SCTL or ASCTL. Additionally, the TEQ did not exceed the residential ASCTL in any of the samples where PAHs were detected (Table 4-2). The detected concentrations are also less than the commercial/industrial ASCTL (3.1 mg/kg) and the alternative leachability criteria (4.7 mg/kg).

The SVOCs bis(2-ethylhexyl)phthalate, benzyl butyl phthalate, and dibutyl phthalate were detected one or more times at estimated concentrations in subsurface soil samples collected from three soil boring locations. In each instance, the detected concentration of these constituents was less than their respective residential, industrial, or leachability to groundwater SCTL.

TRPH was reported at concentrations ranging from an estimated result of 20.4 mg/kg to 54.2 mg/kg in soil samples collected from locations B19SO-01 (XB0004), B19SO-02 (XB0007), B19SO-07 (XB0023), and B19SO-12 (XB0040). These concentrations are less than the residential direct exposure SCTL (460 mg/kg), industrial SCTL (2700 mg/kg), and leachability to groundwater SCTL (340 mg/kg). TRPH results in the remaining subsurface soil samples were reported as non-detect ("U" qualifier) at the limit of detection (LOD).

Subsurface soil samples collected from boring locations B19SO-09 (XB0029) and B19SO-10 (XB0033) were diluted by the laboratory due to the presence of non-target background interference. TRPH results for these samples were reported as non-detect at an elevated LOD, LOQ, and DL. The elevated LOD was less than the residential and industrial SCTLs but was greater than the leachability to groundwater SCTL in both samples. The laboratory did not detect TRPH above the DL, which was also below the leachability to groundwater GCTL in both samples. This information is detailed in Table 4-3 and the laboratory data packages in Appendix E.

The VOC dichloromethane was detected in subsurface soil samples collected from two soil boring locations at concentrations less than the residential, industrial, and leachability to groundwater SCTL. There were no other detections of VOCs in the remaining subsurface soil samples.

4.2 Groundwater Analytical Results

Sections 4.2.1 and 4.2.2 present the analytical results of groundwater samples collected during the SA from direct-push borings and monitoring wells. Groundwater sampling locations are shown on Figure 4-2. Analytical results are summarized in Tables 4-4 and 4-5.

4.2.1 Groundwater Analytical Results from DPT Borings

Nine screening-level groundwater samples, including one duplicate, were collected from seven DPT boring locations (B19HP-01 through B19HP-08) at a depth of 10 to 12 feet bgs. Several PAHs were detected in the sample collected from location B19HP-02; however, none of the detected concentrations exceeded GCTLs. There were no other detections of PAHs in the remaining groundwater samples.

SVOCs were not detected in any of the groundwater samples collected from the DPT borings.

TRPH was detected in groundwater samples collected from four DPT borings at concentrations less than the GCTL.

The VOC dichloromethane was detected in groundwater samples collected from five DPT boring locations (B19HP-01, B19HP-03, and B19HP-06 through -08) at concentrations less than the GCTL. Dichloromethane was also detected at a concentration less than the GCTL in the duplicate sample collected from B19HP-05. cis-1,2-Dichloroethene was detected in the sample from a seventh location (B19HP-02), but also at a concentration less than the GCTL. There were no other detections of VOCs in the remaining samples.

4.2.2 Groundwater Analytical Results from Monitoring Wells

Eight groundwater samples, including one duplicate, were collected from seven monitoring wells (UST19-MW01 through UST19-MW07) during the SA. Naphthalene was detected in groundwater samples analyzed for PAHs from five of the shallow wells; however, none of the detected concentrations exceeded GCTLs. There were no other detections of PAHs in the remaining groundwater samples.

SVOCs were not detected in the groundwater samples collected from the monitoring wells.

TRPH was detected in groundwater samples collected from three shallow wells (UST19-MW01, UST19-MW02, and UST19-MW05) as well as the deep well (UST19-MW07). The detected concentration of TRPH in each of the samples was less than the GCTL.

The VOC carbon disulfide was detected in the groundwater sample collected from the deep well (UST19-MW07); however, the concentration was less than the GCTL. There were no other detections of VOCs in the remaining groundwater samples.

An additional groundwater sample and duplicate were collected from monitoring well UST19-MW02 on December 18, 2018, as requested by FDEP in a path forward e-mail dated July 5,

2018. The sample was analyzed for VOCs by 8260B and PAHs by 8270C LL. Analytical results indicated both samples were non-detect for all constituents analyzed.

4.3 Groundwater Elevations and Flow Direction

Depth to water measurements were obtained during the groundwater sampling event at the Building 19 UST Area site on September 14 and 15, 2016. Table 4-6 includes the depth to water and calculated groundwater elevations from all wells measured. Water table elevations range from 8.27 to 9.60 feet above mean sea level in the shallow wells completed to depth of 12 feet bgs. The groundwater elevation for the deep well was calculated as 7.83 feet above mean sea level. These data indicate a low hydraulic gradient with a groundwater flow direction toward the east-southeast, consistent with previous findings. The groundwater elevation of the deep well indicates a slight downward hydraulic gradient is present at the site. A potentiometric surface map is included as Figure 4-3.

4.4 Potable Well Survey

A well survey of public and private wells was completed by means of the Florida Department of Health geographic information system website. The survey shows two active potable wells are located within 0.5 mile of the Building 19 UST Area site. The closest potable well, AAC2045, is located approximately 0.2 mile northeast of the site within the Reynolds Industrial Park. The second closest potable well, AAC2043, is located approximately 0.4 mile northwest of the site. Potable well locations are shown on Figure 4-4.

5.0 Conclusions and Recommendations

The Building 19 UST Area is located at 965 Bunker Avenue. A 500-gallon UST, used to store fresh lubrication oil, was located in a grassy area south of Building 19. Building 19 was constructed in 1942 as an aircraft hangar, but was used extensively by engineering maintenance during the active years of LFNAS. Building 19 housed a carpenter shop, storerooms, and offices. Building 19 was also used as a warehouse for shipboard supplies following World War II. Current land use is commercial/industrial, and there are no known plans to change the present day use of the property.

The SA activities for the Building 19 UST Area were conducted from August to September 2016. These activities included surface and subsurface soil sampling, DPT groundwater sampling, monitoring well installation, and monitoring well groundwater sampling. All samples for all media were analyzed for VOCs, PAHs, SVOCs, and TRPH.

The objective of the SA was to obtain sufficient data to define the current nature and extent of DoD-related soil and groundwater contamination identified during the previous investigations as well as their likely source.

Sections 5.1 through 5.4 summarize conclusions and recommendations for the Building 19 UST Area SA.

5.1 Surface Soil Conclusions

Evaluation of the surface soil data indicates that benzo(a)pyrene is present at concentrations greater than the residential SCTL of 0.1 mg/kg at locations B19SO-01 (0.228 mg/kg) and B19SO-06 (0.219 mg/kg). The TEQ did not exceed the residential ASCTL in any of the samples where PAHs were detected. No other contaminants are present above their respective residential SCTLs and no contaminants are present above industrial SCTLs, ASCTLs, or leachability criteria, excluding TRPH. As described in Section 4.1.1, the TRPH results for sample XB0027 (Boring B19SO-09) was reported as non-detect (“U” qualified) at an elevated LOD of 2,050 mg/kg. The LOD exceeds the residential SCTL of 460 mg/kg but does not exceed the industrial SCTL of 2,700 mg/kg.

5.2 Subsurface Soil Conclusions

Evaluation of the subsurface soil data indicates that no contaminants are present above their respective residential SCTL, ASCTLs, or leachability criteria. Additionally, the TEQ did not exceed the residential ASCTL in any of the samples where PAHs were detected. As described in

Section 4.1.2, TRPH results for samples XB0029 and XB0033 were reported as non-detect ("U" qualified) at elevated LODs of 450 mg/kg and 417 mg/kg, respectively. These concentrations do not exceed the residential SCTL of 460 mg/kg or industrial SCTL of 2,700 mg/kg.

5.3 Groundwater Conclusions

The following paragraphs summarize the conclusions based on the groundwater data obtained during the SA.

DPT Groundwater Samples. During the SA, groundwater samples were collected from DPT borings to assess the presence or absence of contaminants in groundwater in areas previously investigated using incomplete or inconsistent analytical methodologies. Although several PAHs were detected in the groundwater sample collected from location B19HP-02, none of the detected concentrations exceeded GCTLs. There were no other detections of PAHs in the remaining groundwater samples collected from the DPT borings. SVOCs were not detected in any of the samples. Limited detections of TRPH and the VOCs dichloromethane and cis-1,2-dichloroethene were less than their respective GCTLs.

Monitoring Well Groundwater Samples. The PAH naphthalene was detected in samples collected from five of the shallow wells; however, none of the detected concentrations exceeded the GCTL. SVOCs were not detected in any of the samples. TRPH was detected in groundwater samples collected from three shallow wells (UST19-MW01, UST19-MW02, and UST19-MW05) as well as the deep well (UST19-MW07) at concentrations less than GCTLs. The VOC carbon disulfide was detected in the groundwater sample collected from the deep well (UST19-MW07); however, the concentration was less than the GCTL. The detections of dichloromethane and cis-1,2-dichloroethene in screening level groundwater samples were not confirmed by samples collected from the monitoring wells and these contaminants are not related with DoD use of the UST. There were no other detections of PAHs, SVOCs, TRPH, or VOCs in the remaining groundwater samples.

5.4 Summary and Recommendations

The SA adequately defines the current nature and extent of DoD-related soil and groundwater contamination identified during the previous investigations, and an evaluation of all conclusions has been completed. Groundwater contamination in excess of GCTLs is not present at the Building 19 UST Area, confirming the reduction in contaminant concentrations, particularly isopropylbenzene, observed in previous investigations. Additionally, TRPH results from groundwater samples collected during the SA are all less than the GCTL of 5 mg/l, establishing that the leachability to groundwater SCTL (340 mg/kg) is not applicable to Building 19. Per Chapter 62-780, F.A.C., soil leachability only applies when groundwater concentrations exceed

the GCTL. Accordingly, potentially applicable soil SCTLs for Building 19 are the risk based residential (460 mg/kg) and industrial (2,700 mg/kg) SCTLs along with the residential benzo(a)pyrene TEQ ASCTL (1.0 mg/kg). The Building 19 area is located internal to the Reynolds Industrial Park and surrounded by industrial business operations.

The 2006 final soil excavation confirmation samples were "clean" with TRPH detected at 13.4 and 16.4 mg/kg, well below the residential and industrial SCTLs. Soil contamination in excess of applicable residential SCTLs or ASCTLs is not present in any of the samples collected during the SA.

During the 2016 SA, multiple samples were diluted by the laboratory due to the presence of non-target background interference. TRPH results for these samples were reported as non-detect at an elevated LOD, LOQ, and DL. The elevated LOD was greater than the residential TRPH SCTL in samples collected from the 0 to 0.5 foot interval of location B19SO-09 (2050 mg/kg) and the 0.5 to 2-foot interval from location B19SO-010 (480 mg/kg). The level of dilution is directly related to the reported LOD, i.e. a 20-fold dilution yielded an LOD ranging from 373 mg/kg to 80 mg/kg and a 100-fold dilution yielded an LOD of 2050 mg/kg. Due to the lack of any groundwater samples in excess of the TRPH GCTL, these non-detects are not a concern for leaching. In addition, soil samples that were analyzed without dilution or only a 10-fold dilution exhibited DLs of 10.5-12.6 mg/kg, well below the residential SCTL of 460 mg/kg. This indicates that the higher detection limits are the result of the laboratory dilution and not indicative of true field concentrations. No detected soil TRPH concentrations exceed the residential SCTL.

Based on the lines of evidence presented above, No Further Action is recommended for the Building 19 UST Area.

6.0 References

CB&I Federal Services LLC (CB&I), 2016, ***Final Building 19 UST Area Site Assessment Work Plan, Former Lee Field Naval Air Station, Green Cove Springs, Florida***, June.

Florida Department of Environmental Protection (FDEP), 2005, ***Design, Installation, and Placement of Monitoring Wells,*** FDEP Standard Operating Procedures PCS-006, Bureau of Petroleum Storage Systems, Petroleum Cleanup Program, effective May 2, 2005.

PHR Environmental Consultants, Inc., 2001, ***Final Historical Operations Summary Former Lee Field Naval Air Station Green Cove Springs, Florida,*** Prepared for IT Corporation Project ITC.71/783147, August.

Shaw Environmental, Inc. (Shaw), 2007, ***Final August 2007 Supplemental Sampling Report, Building 19 Underground Storage Tank Site, Former Lee Field Naval Air Station, Green Cove Springs, Florida,*** December.

Shaw Environmental, Inc. (Shaw), 2006, ***Supplemental Excavation Report, Building 19 UST Site, Former Lee Field Naval Air Station, Green Cove Springs, Florida,*** December.

Shaw Environmental, Inc. (Shaw), 2005, ***Final Buildings 9 and 19 UST Interim Removal Action Report, Former Lee Field Naval Air Station, Green Cove Springs, Florida,*** July.

TerranearPMC, LLC (TPMC) and Shaw Environmental, Inc. (Shaw), 2013, ***Final Building 19 Underground Storage Tank Area Supplemental Site Assessment Report, Former Lee Field Naval Air Station, Green Cove Springs, Florida,*** March.

TerranearPMC, LLC (TPMC) and Shaw Environmental, Inc. (Shaw), 2009, ***Draft Final August 2009 Supplemental Site Assessment Report/No Further Action Proposal, Building 19 Underground Storage Tank Site, Former Lee Field Naval Air Station, Green Cove Springs, Florida,*** December.

The Payne Firm, Inc., 1994, ***Phase II Environmental Investigation, Price Brothers Composite Pipe Facility, Green Cove Springs, Florida, Project Number 0212.45,*** January.

University of Florida Center for Environment & Human Toxicology, 2017, **Review of benzo(a)pyrene ASCTLs in letters dated February 10 and May 11, 2017**, letter from Stephen M. Roberts, PhD and Leah D. Stuchal, PhD, University of Florida. Letter to Gladys Liehr, Office of District and Business Support, Division of Waste Management, Florida Department of Environmental Protection, August 01.

U.S. Army Corps of Engineers (USACE), 2011, ***Inventory Project Report (Revised), Lee Field Naval Air Station, Green Cove Springs, Clay County, Florida***, March.

U.S. Army Corps of Engineers (USACE), 1999, ***Request for Proposal Under DACA 21-96-0018, Task Order 0009 for Former Lee Field Naval Air Station***, May.

TABLES

Table 3-1

Well Construction Details
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Well Identification	Date Installed	Installation Method	Top of Casing Elevation (ft AMSL)	Above Ground Riser Length, If Applicable	Well Total Depth (ft bgs)	Screened Interval (ft bgs)	Well Diameter (inches)
UST19-MW01	4/30/2009	DPT	12.34	NA	12	2 - 12	2
UST19-MW02	10/31/2011	DPT	12.87	NA	12	2 - 12	2
UST19-MW03	10/31/2011	DPT	12.79	NA	12	2 - 12	2
UST19-MW04	10/31/2011	DPT	12.70	NA	12	2 - 12	2
UST19-MW05	8/23/2016	DPT	12.46	NA	12	2 - 12	1
UST19-MW06	8/23/2016	DPT	12.90	NA	12	2 - 12	1
UST19-MW07	8/23/2016	DPT	13.14	NA	35	30-35	1

Notes:

DPT - Direct-push technology.

ft AMSL - Feet above mean sea level.

ft bgs - Feet below ground surface.

ft bgs - Feet below ground surface.

NA - Not Applicable.

Table 3-2

Laboratory Sample Analyses
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Location ID	Sample ID	Matrix	Depth (feet bgs)	Type	Analyte/Analytical Group
Soil Boring Locations					
B19SO-01	XB0001	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-01	XB0002	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-01	XB0003	Soil	0.5 - 2	Field Duplicate	VOCs, SVOCs, PAHs, TRPH
B19SO-01	XB0004	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-02	XB0005	Surface Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-02	XB0006	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-02	XB0007	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-03	XB0008	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-03	XB0009	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-03	XB0010	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-04	XB0011	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-04	XB0012	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-04	XB0013	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-05	XB0014	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-05	XB0015	Surface Soil	0 - 0.5	Field Duplicate	VOCs, SVOCs, PAHs, TRPH
B19SO-05	XB0016	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-05	XB0017	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-06	XB0018	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-06	XB0019	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-06	XB0020	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-07	XB0021	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-07	XB0022	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-07	XB0023	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-08	XB0024	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-08	XB0025	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-08	XB0026	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-09	XB0027	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-09	XB0028	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-09	XB0029	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-10	XB0030	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-10	XB0031	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-10	XB0032	Soil	0.5 - 2	Field Duplicate	VOCs, SVOCs, PAHs, TRPH
B19SO-10	XB0033	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-11	XB0034	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-11	XB0035	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-11	XB0036	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-12	XB0037	Surface Soil	0 - 0.5	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-12	XB0038	Soil	0.5 - 2	Regular	VOCs, SVOCs, PAHs, TRPH
B19SO-12	XB0039	Soil	2 - 4	Field Duplicate	VOCs, SVOCs, PAHs, TRPH
B19SO-12	XB0040	Soil	2 - 4	Regular	VOCs, SVOCs, PAHs, TRPH

Table 3-2

Laboratory Sample Analyses
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Location ID	Sample ID	Matrix	Depth (feet bgs)	Type	Analyte/Analytical Group
DPT Groundwater Samples					
B19HP-01	XB3001	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-02	XB3002	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-03	XB3003	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-04	XB3004	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-05	XB3005	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-05	XB3018	DPT Groundwater	10 - 12	Field Duplicate	VOCs, SVOCs, PAHs, TRPH
B19HP-06	XB3006	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-07	XB3007	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
B19HP-08	XB3008	DPT Groundwater	10 - 12	Regular	VOCs, SVOCs, PAHs, TRPH
Groundwater Samples					
UST19-MW01	XB3009	Groundwater	7.3	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW01	XB3010	Groundwater	7.3	Field Duplicate	VOCs, SVOCs, PAHs, TRPH
UST19-MW02	XB3011	Groundwater	7.1	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW03	XB3012	Groundwater	7.5	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW04	XB3013	Groundwater	7.6	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW05	XB3014	Groundwater	7.6	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW06	XB3015	Groundwater	7	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW07	XB3016	Groundwater	32.5	Regular	VOCs, SVOCs, PAHs, TRPH
UST19-MW02	XB3020	Groundwater	7	Regular	VOCs, PAHs
UST19-MW02	XB3021	Groundwater	7	Field Duplicate	VOCs, PAHs

Notes:

ft bgs- feet below ground surface.

PAHs - Polynuclear aromatic hydrocarbons by EPA Method 8270C with low level Simultaneous Ion Monitoring.

SVOCs - Semivolatile organic compounds by EPA Method 8270C.

TRPH - Total Recoverable Petroleum Hydrocarbons by the Florida PRO method.

VOCs - Volatile organic compounds by EPA Method 8260B.

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location			B19SO-01			B19SO-01			B19SO-01			B19SO-01			B19SO-02			B19SO-02		
					Sample Designation			XB0001			XB0002			XB0003			XB0004			XB0005			XB0006		
					Collection Date			8/17/2016			8/17/2016			8/17/2016			8/17/2016			8/17/2016			8/17/2016		
					Depth (ft bgs)			0 - 0.5			0.5 -2			0.5 -2			2 -4			0.0 - 0.5			0.5 -2		
					PID Reading (ppm)			0			0			0			0			0			0		
					Sample Purpose			REG			REG			FD			REG			REG			REG		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																									
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0.009	U	U	0.00216	U	U	0.00223	U	U	0.00203	U	U	0.00197	U	U	0.00177	U	U			
2-Methylnaphthalene	mg/kg	210	2100	8 5	0.009	U	U	0.00216	U	U	0.00223	U	U	0.00203	U	U	0.00197	U	U	0.00177	U	U			
Acenaphthene	mg/kg	2400	20000	2.1	0 0178	U	U	0.00428	U	U	0.00441	U	U	0.00401	U	U	0.00389	U	U	0 0035	U	U			
Acenaphthylene	mg/kg	1800	20000	27	0.014	J	J	0.00428	U	U	0.00441	U	U	0.00401	U	U	0 0355			0.00183	J	J			
Anthracene	mg/kg	21000	300000	2500	0.00914	J	J	0.00216	U	U	0.00223	U	U	0.00203	U	U	0 0201			0 0008	J	J			
Benzo(a)anthracene	mg/kg	#	#	0 8	0 0308			0.00428	U	U	0.00441	U	U	0.00401	U	U	0 0412			0.00481					
Benzo(a)pyrene	mg/kg	0.1	0.7	8	**0.228**			0.00057	J	J	0.001	J	J	0.00078	J	J	0 0907			0.00572					
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0.284			0.00428	U	U	0.00441	U	U	0.00401	U	U	0.143			0.00959					
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0.15			0.00216	U	U	0.00223	U	U	0.00104	J	J	0 0959			0.00407					
Benzo(k)fluoranthene	mg/kg	#	#	24	0 0978			0.00216	U	U	0.00064	J	J	0.00203	U	U	0 0418			0.00321	J	J			
Chrysene	mg/kg	#	#	77	0 0456			0.00428	U	U	0.00441	U	U	0.00401	U	U	0 0581			0.00548					
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0 0361			0.00428	U	U	0.00441	U	U	0.00401	U	U	0 0183			0 0035	U	U			
Fluoranthene	mg/kg	3200	59000	1200	0.072			0.00216	U	U	0.00096	J	J	0.00186	J	J	0 0576			0.00685					
Fluorene	mg/kg	2600	33000	160	0.009	U	U	0.00216	U	U	0.00223	U	U	0.00203	U	U	0.00151	J	J	0.00177	U	U			
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6 6	0.175			0.00216	U	U	0.00067	J	J	0.00089	J	J	0.084			0.00475					
Naphthalene	mg/kg	55	300	1 2	0.00927	J	J	0.00216	U	U	0.00223	U	U	0.00203	U	U	0.00153	J	J	0.00065	J	J			
Phenanthrene	mg/kg	2200	36000	250	0 0297			0.00216	U	U	0.00223	U	U	0.00113	J	J	0.00887			0.00119	J	J			
Pyrene	mg/kg	2400	45000	880	0 0529			0.00216	U	U	0.00223	U	U	0.00142	J	J	0 0629			0 0062					
SEMIVOLATILES																									
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0.357	UQ	UJ	0.088	UQ	UJ	0 0895	UQ	UJ	0 0819	UQ	UJ	0 0789	UQ	UJ	0 0712	UQ	UJ			
4-Nitrophenol	mg/kg	560	7900	0 3	0.357	U	U	0.088	U	U	0 0895	U	U	0 0819	U	U	0 0789	U	U	0 0712	U	U			
Benzoic Acid	mg/kg	180000	#	110	0.357	UQ	U	0.088	UQ	U	0 0895	UQ	U	0 0819	UQ	U	0 0789	UQ	U	0 0712	UQ	U			
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0 0891	U	U	0 0219	U	U	0 0223	U	U	0 0204	U	U	0 0197	U	U	0 0177	U	U			
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0 0731	J	U	0 0155	J	U	0 0223	U	U	0 0391	J	U	0 0264	J	U	0 0144	J	U			
Carbazole	mg/kg	49	240	0 2	0 0891	U	U	0 0219	U	U	0 0223	U	U	0 0204	U	U	0 0197	U	U	0 0177	U	U			
Dibutyl Phthalate	mg/kg	8200	170000	47	0 0415	J	J	0 0219	U	U	0 0223	U	U	0 0204	U	U	0 0103	J	J	0 0228	J	J			
Nitrosodiphenylamine	mg/kg	180	730	0.4	0 0657	J	J	0 0219	U	U	0 0223	U	U	0 0204	U	U	0 0197	U	U	0 0279	J	J			
Pyridine	mg/kg	20	130	0.03	0.891	U	U	0.219	U	U	0.223	U	U	0.204	U	U	0.197	U	U	0.177	U	U			
TRPH																									
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	155	J	J	27.9		J	23.2	U	UJ	54.2			209	U	U	44.1					
VOLATILES																									
Dichloromethane	mg/kg	17	26	0.02	0.00252	U	U	0.00256	U	U	0.00301	U	U	0.00262	U	U	0.00266	U	U	0.00242	U	U			
Tetrachloroethylene (PCE)	mg/kg	8.8	18	0.03	0.00384	JQ	J	0.00128	U	U	0 0015	U	U	0.00131	U	U	0.00133	U	U	0.00121	U	U			

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location	B19SO-02			B19SO-03			B19SO-03			B19SO-03			B19SO-04			B19SO-04		
					Sample Designation	XB0007			XB0008			XB0009			XB0010			XB0011			XB0012		
					Collection Date	8/17/2016			8/18/2016			8/18/2016			8/18/2016			8/18/2016			8/18/2016		
					Depth (ft bgs)	2 -4			0 - 0.5			0.5 -2			2 -4			0 - 0.5			0.5 -2		
					PID Reading (ppm)	0			0			0			0			0			0		
					Sample Purpose	REG			REG			REG			REG			REG			REG		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																						
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0.00201	U	U	0.00881	U	U	0 00185	U	U	0 00196	U	U	0 00575	J	J	0 00187	U	U
2-Methylnaphthalene	mg/kg	210	2100	8 5	0.00201	U	U	0.00881	U	U	0 00185	U	U	0 00196	U	U	0 00953	U	U	0 00187	U	U
Acenaphthene	mg/kg	2400	20000	2.1	0.00397	U	U	0 0174	U	U	0 00365	U	U	0 00387	U	U	0.0188	U	U	0 00369	U	U
Acenaphthylene	mg/kg	1800	20000	27	0.00397	U	U	0.00948	J	J	0 00365	U	U	0 00387	U	U	0.0119	J	J	0 00369	U	U
Anthracene	mg/kg	21000	300000	2500	0.00201	U	U	0.00832	J	J	0 00185	U	U	0 00196	U	U	0 01	J	J	0 00187	U	U
Benzo(a)anthracene	mg/kg	#	#	0 8	0.00397	U	U	0 0429			0 00383			0 00387	U	U	0.0602			0 00369	U	U
Benzo(a)pyrene	mg/kg	0.1	0.7	8	0.00201	U	U	0 0505			0 00577			0 00196	U	U	0.0858			0 00112	J	J
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0.00397	U	U	0 0805			0 00927			0 00387	U	U	0.147			0 00369	U	U
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0.00201	U	U	0 0389			0 00451			0 00196	U	U	0.0726			0 00095	J	J
Benzo(k)fluoranthene	mg/kg	#	#	24	0.00201	U	U	0 0283			0 00344	J	J	0 00196	U	U	0.0472			0 00065	J	J
Chrysene	mg/kg	#	#	77	0.00397	U	U	0 0524			0 00749			0 00387	U	U	0.0804			0 00369	U	U
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0.00397	U	U	0 0174	U	U	0 00365	U	U	0 00387	U	U	0.0138	J	J	0 00369	U	U
Fluoranthene	mg/kg	3200	59000	1200	0.00056	J	J	0 0961			0.0182			0 00196	U	U	0.109			0 00057	J	J
Fluorene	mg/kg	2600	33000	160	0.00201	U	U	0.00881	U	U	0 00185	U	U	0 00196	U	U	0 00953	U	U	0 00187	U	U
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6 6	0.00201	U	U	0 0392			0 00552			0 00196	U	U	0.0752			0 00098	J	J
Naphthalene	mg/kg	55	300	1 2	0.00052	J	J	0.00881	U	U	0 00051	J	J	0 00196	U	U	0 00537	J	J	0 00187	U	U
Phenanthrene	mg/kg	2200	36000	250	0.00201	U	U	0 0362			0.0126			0 00196	U	U	0.0547			0 00187	U	U
Pyrene	mg/kg	2400	45000	880	0.00201	U	U	0 0701			0.013			0 00196	U	U	0.0982			0 00187	U	U
SEMIVOLATILES																						
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0 0811	UQ	UJ	0.707	U	U	0.0731	U	U	0.0785	U	U	0.152	U	U	0.0749	U	U
4-Nitrophenol	mg/kg	560	7900	0 3	0 0811	U	U	0.707	U	U	0.0731	U	U	0.0785	U	U	0.152	U	U	0.0749	U	U
Benzoic Acid	mg/kg	180000	#	110	0 0811	UQ	U	0.707	UJ	UJ	0.0731	U	U	0.0785	U	U	0.152	U	U	0.0749	U	U
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0 0202	U	U	0.176	U	U	0.0182	U	U	0.0196	U	U	0.038	U	U	0.0187	U	U
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0 0136	J	U	0.176	U	U	0.0104	J	J	0.0122	J	J	0.0488	J	J	0.0165	J	J
Carbazole	mg/kg	49	240	0 2	0 0202	U	U	0.176	U	U	0.0182	U	U	0.0196	U	U	0.038	U	U	0.0187	U	U
Dibutyl Phthalate	mg/kg	8200	170000	47	0 0202	U	U	0.176	U	U	0.0182	U	U	0.0196	U	U	0.038	U	U	0.0187	U	U
Nitrosodiphenylamine	mg/kg	180	730	0.4	0 0202	U	U	0.176	U	U	0.0182	U	U	0.0196	U	U	0.038	U	U	0.0187	U	U
Pyridine	mg/kg	20	130	0.03	0.202	U	U	1.76	U	U	0.182	U	U	0.196	U	U	0 38	U	U	0.187	U	U
TRPH																						
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	16.3	J	J	373	U	U	14.7	J	J	20.7	U	U	402	U	U	11.4	J	J
VOLATILES																						
Dichloromethane	mg/kg	17	26	0.02	0.00212	U	U	0.00233	U	U	0 00233	U	U	0 00308	U	U	0.0026	U	U	0 00245	U	U
Tetrachloroethylene (PCE)	mg/kg	8.8	18	0.03	0.00106	U	U	0.00117	U	U	0 00116	U	U	0 00154	U	U	0.0013	U	U	0 00123	U	U

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location			B19SO-04			B19SO-05			B19SO-05			B19SO-05			B19SO-05			B19SO-06		
					Sample Designation			XB0013			XB0014			XB0015			XB0016			XB0017			XB0018		
					Collection Date			8/18/2016			8/17/2016			8/17/2016			8/17/2016			8/17/2016			8/18/2016		
					Depth (ft bgs)			2 -4			0 - 0.5			0 - 0.5			0.5 -2			2 -4			0 - 0.5		
					PID Reading (ppm)			0			0.5			0.5			0			0			0		
					Sample Purpose			REG			REG			FD			REG			REG			REG		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																									
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0 0021	U	U	0.00187	U	U	0 00237	U	U	0 00222	U	U	0.002	U	U	0 00236	U	U			
2-Methylnaphthalene	mg/kg	210	2100	8 5	0 0021	U	U	0.00187	U	U	0 00237	U	U	0 00222	U	U	0.002	U	U	0 00236	U	U			
Acenaphthene	mg/kg	2400	20000	2.1	0.00416	U	U	0.00369	U	U	0 00468	U	U	0 00439	U	U	0 00395	U	U	0 00467	U	U			
Acenaphthylene	mg/kg	1800	20000	27	0.00416	U	U	0 0139			0.0142			0 00439	U	U	0 00395	U	U	0.0375					
Anthracene	mg/kg	21000	300000	2500	0 0021	U	U	0.00625			0 00669			0 00078	J	J	0.002	U	U	0.0103					
Benzo(a)anthracene	mg/kg	#	#	0 8	0.00416	U	U	0 0539			0.0535			0 00587			0 00347	J	J	0.135					
Benzo(a)pyrene	mg/kg	0.1	0.7	8	0 0021	U	U	0 0888			0.0821			0 00919			0 00506			**0.219**					
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0.00416	U	U	0.133			0.142			0.0143			0 00766			0.292					
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0 0021	U	U	0 0507			0.0427			0 00587			0.0032	J	J	0.16					
Benzo(k)fluoranthene	mg/kg	#	#	24	0 0021	U	U	0 0452			0.0471			0 00522			0 00268	J	J	0.105					
Chrysene	mg/kg	#	#	77	0.00416	U	U	0 0637			0.0804			0 00768			0 00378	J	J	0.153					
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0.00416	U	U	0 0102			0 00993			0 00439	U	U	0 00395	U	U	0.0321					
Fluoranthene	mg/kg	3200	59000	1200	0 0021	U	U	0 0766		J	0.145		J	0.0104			0 00478			0.188					
Fluorene	mg/kg	2600	33000	160	0 0031	J	J	0 0005	J	J	0 00175	J	J	0 00222	U	U	0.002	U	U	0 00204	J	J			
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6 6	0 0021	U	U	0 0606			0.0535			0 00705			0 00374	J	J	0.183					
Naphthalene	mg/kg	55	300	1 2	0 0021	U	U	0.00188	J	J	0 00161	J	J	0 00074	J	J	0.002	U	U	0.0029	J	J			
Phenanthrene	mg/kg	2200	36000	250	0 0021	U	U	0 0137		J	0.08		J	0 00376	J	J	0.002	U	U	0.0379					
Pyrene	mg/kg	2400	45000	880	0 0021	U	U	0 0712		J	0.12		J	0.0086			0 00434			0.171					
SEMIVOLATILES																									
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0 0844	U	U	0 0745	UQ	UJ	0.0938	UQ	UJ	0.0887	UQ	UJ	0.0796	UQ	UJ	0.0948	U	U			
4-Nitrophenol	mg/kg	560	7900	0 3	0 0844	U	U	0 0745	U	U	0.0938	U	U	0.0887	U	U	0.0796	U	U	0.0948	U	U			
Benzoic Acid	mg/kg	180000	#	110	0 0844	U	U	0 0745	UQ	U	0.0938	UQ	U	0.0887	UQ	U	0.0796	UQ	U	0.0948	U	U			
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0.021	U	U	0 0186	U	U	0.0116	J	J	0.0221	U	U	0.0198	U	U	0.0236	U	U			
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0.021	U	U	0 0102	J	U	0.025	J	U	0.0221	U	U	0.0198	U	U	0.0229	J	J			
Carbazole	mg/kg	49	240	0 2	0.021	U	U	0 0186	U	U	0.0234	U	U	0.0221	U	U	0.0198	U	U	0.0236	U	U			
Dibutyl Phthalate	mg/kg	8200	170000	47	0.021	U	U	0 0359	J	J	0.0249	J	J	0.0221	U	U	0.0198	U	U	0.0128	J	J			
Nitrosodiphenylamine	mg/kg	180	730	0.4	0.021	U	U	0 0186	U	U	0.0234	U	U	0.0221	U	U	0.0198	U	U	0.0236	U	U			
Pyridine	mg/kg	20	130	0.03	0.21	U	U	0.186	U	U	0.234	U	U	0.221	U	U	0.198	U	U	0.236	U	U			
TRPH																									
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	22.2	U	U	36.3		J	249	U	UJ	19.7	J	J	20.8	U	U	250	U	U			
VOLATILES																									
Dichloromethane	mg/kg	17	26	0.02	0.00294	U	U	0 0022	U	U	0 00286	U	U	0 00286	U	U	0 00217	U	U	0 00315	U	U			
Tetrachloroethylene (PCE)	mg/kg	8.8	18	0.03	0.00147	U	U	0 0011	U	U	0 00143	U	U	0 00143	U	U	0 00109	U	U	0 00158	U	U			

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location			B19SO-06			B19SO-06			B19SO-07			B19SO-07			B19SO-07			B19SO-08		
					Sample Designation			XB0019			XB0020			XB0021			XB0022			XB0023			XB0024		
					Collection Date			8/18/2016			8/18/2016			8/17/2016			8/17/2016			8/17/2016			8/18/2016		
					Depth (ft bgs)			0.5 -2			2 -4			0 - 0.5			0.5 -2			2 -4			0 - 0.5		
					PID Reading (ppm)			0			0			0.7			0			0			0		
					Sample Purpose			REG			REG			REG			REG			REG			REG		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																									
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0.00176	U	U	0.00186	U	U	0 00101	J	J	0 00202	U	U	0 00209	U	U	0 00879	U	U
2-Methylnaphthalene	mg/kg	210	2100	8 5	0.00176	U	U	0.00186	U	U	0 00122	J	J	0 00202	U	U	0 00209	U	U	0 00879	U	U
Acenaphthene	mg/kg	2400	20000	2.1	0.00347	U	U	0.00367	U	U	0 00231	J	J	0.004	U	U	0 00413	U	U	0.0174	U	U
Acenaphthylene	mg/kg	1800	20000	27	0.00347	U	U	0.00367	U	U	0.0341			0.004	U	U	0 00413	U	U	0.0111	J	J
Anthracene	mg/kg	21000	300000	2500	0.00176	U	U	0.00186	U	U	0.0168			0.0007	J	J	0 00209	U	U	0.0106	J	J
Benzo(a)anthracene	mg/kg	#	#	0 8	0.00347	U	U	0.00367	U	U	0.105			0 00449	J	J	0 00413	U	U	0.0655		
Benzo(a)pyrene	mg/kg	0.1	0.7	8	0.00063	J	J	0.00186	U	U	**0.129**			0 00573	J	J	0 00174	J	J	0.0834		
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0.00347	U	U	0.00367	U	U	0.209			0 00837	J	J	0 00314	J	J	0.139		
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0.00176	U	U	0.00186	U	U	0.0579			0 00309	J	J	0 00107	J	J	0.0684		
Benzo(k)fluoranthene	mg/kg	#	#	24	0.00176	U	U	0.00186	U	U	0.0743			0 00432	J	J	0 00108	J	J	0.0504		
Chrysene	mg/kg	#	#	77	0.00347	U	U	0.00367	U	U	0.118			0 00488	J	J	0 00413	U	U	0.0932		
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0.00347	U	U	0.00367	U	U	0.0161			0.004	U	U	0 00413	U	U	0.0133	J	J
Fluoranthene	mg/kg	3200	59000	1200	0.00049	J	J	0.00186	U	U	0.192			0 00548	J	J	0 00144	J	J	0.135		
Fluorene	mg/kg	2600	33000	160	0.00176	U	U	0.00186	U	U	0 00299	J	J	0 00202	U	U	0 00209	U	U	0 00879	U	U
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6 6	0.00176	U	U	0.00186	U	U	0.0764			0.0042	J	J	0 00129	J	J	0.0789		
Naphthalene	mg/kg	55	300	1 2	0.00176	U	U	0.00186	U	U	0 00248	J	J	0 00053	J	J	0 00209	U	U	0 00444	J	J
Phenanthrene	mg/kg	2200	36000	250	0.00176	U	U	0.00186	U	U	0.0691			0 00133	JJ	J	0 00209	U	U	0.0456		
Pyrene	mg/kg	2400	45000	880	0.00176	U	U	0.00186	U	U	0.152			0 00434	J	J	0 00136	J	J	0.112		
SEMIVOLATILES																									
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0 0705	U	U	0 0749	U	U	0.069	UQ	UJ	0.0812	U	U	0.0853	UQ	UJ	0.142	U	U
4-Nitrophenol	mg/kg	560	7900	0 3	0 0705	U	U	0 0749	U	U	0.069	U	U	0.0812	U	U	0.0853	U	U	0.142	U	U
Benzoic Acid	mg/kg	180000	#	110	0 0705	U	U	0 0749	U	U	0.069	UQ	U	0.0812	U	U	0.0853	UQ	U	0.142	U	U
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0 0176	U	U	0 0187	U	U	0.0172	U	U	0.0202	U	U	0.0213	U	U	0.0354	U	U
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0.01	J	J	0 0187	U	U	0 00904	J	U	0.0202	U	U	0.0213	U	U	0.0383	J	J
Carbazole	mg/kg	49	240	0 2	0 0176	U	U	0 0187	U	U	0 00853	J	J	0.0202	U	U	0.0213	U	U	0.0354	U	U
Dibutyl Phthalate	mg/kg	8200	170000	47	0 0176	U	U	0 0187	U	U	0.0172	U	U	0.0202	U	U	0.0213	U	U	0.0233	J	J
Nitrosodiphenylamine	mg/kg	180	730	0.4	0 0176	U	U	0 0187	U	U	0.0172	U	U	0.0202	U	U	0.0213	U	U	0.0354	U	U
Pyridine	mg/kg	20	130	0.03	0.176	U	U	0.187	U	U	0.172	U	U	0.202	U	U	0.213	U	U	0.354	U	U
TRPH																									
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	18.6	U	U	19.9	U	U	184	U	U	19	J	J	22	J	J	376	U	U
VOLATILES																									
Dichloromethane	mg/kg	17	26	0.02	0.00237	U	U	0.00209	U	U	0 00224	U	U	0 00134	J	J	0 00182	U	U	0 00239	U	U
Tetrachloroethylene (PCE)	mg/kg	8.8	18	0.03	0.00119	U	U	0.00105	U	U	0 00112	U	U	0 00124	UJ	U	0 00091	U	U	0 00119	U	U

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location			B19SO-08			B19SO-08			B19SO-09			B19SO-09			B19SO-09			B19SO-10		
					Sample Designation			XB0025			XB0026			XB0027			XB0028			XB0029			XB0030		
					Collection Date			8/18/2016			8/18/2016			8/18/2016			8/18/2016			8/18/2016			8/18/2016		
					Depth (ft bgs)			0.5 -2			2 -4			0 - 0.5			0.5 -2			2 -4			0 - 0.5		
					PID Reading (ppm)			0.9			0			0			0			0			0		
					Sample Purpose			REG			REG			REG			REG			REG			REG		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																									
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0.00183	U	U	0.00199	U	U	0 00969	U	U	0.002	U	U	0 00211	U	U	0 00179	U	U			
2-Methylnaphthalene	mg/kg	210	2100	8 5	0.00183	U	U	0.00199	U	U	0 00969	U	U	0.002	U	U	0 00211	U	U	0 00179	U	U			
Acenaphthene	mg/kg	2400	20000	2.1	0.00362	U	U	0.00393	U	U	0.0191	U	U	0 00396	U	U	0 00417	U	U	0 00354	U	U			
Acenaphthylene	mg/kg	1800	20000	27	0.00362	U	U	0.00393	U	U	0.0191	U	U	0 00396	U	U	0 00272	J	J	0 00304	J	J			
Anthracene	mg/kg	21000	300000	2500	0.00082	J	J	0.00199	U	U	0 00414	J	J	0.002	U	U	0.002	J	J	0 00432					
Benzo(a)anthracene	mg/kg	#	#	0 8	0.00874			0.00393	U	U	0.0217			0.0035	J	J	0.0139			0.0213					
Benzo(a)pyrene	mg/kg	0.1	0.7	8	0 0105			0.00199	U	U	0.0287			0 00346	J	J	0.0165			0.0282					
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0 0175			0.00393	U	U	0.0439			0 00546			0.0293			0.0534					
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0.007			0.00199	U	U	0.0208			0 00201	J	J	0 00932			0.0162					
Benzo(k)fluoranthene	mg/kg	#	#	24	0.00621			0.00199	U	U	0.0151	J	J	0 00204	J	J	0 00965			0.0174					
Chrysene	mg/kg	#	#	77	0 0126			0.00393	U	U	0.0281			0 00399			0.0187			0.0276					
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0.00362	U	U	0.00393	U	U	0.0191	U	U	0 00396	U	U	0 00249	J	J	0 00417					
Fluoranthene	mg/kg	3200	59000	1200	0 0193			0.00199	U	U	0.0407			0.0034	J	J	0.0296			0.0338					
Fluorene	mg/kg	2600	33000	160	0.00183	U	U	0.00199	U	U	0 00969	U	U	0.002	U	U	0 00211	U	U	0 00179	U	U			
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6 6	0.00912			0.00199	U	U	0.0229			0.0025	J	J	0.0122			0.0204					
Naphthalene	mg/kg	55	300	1 2	0.00183	U	U	0.00199	U	U	0 00969	U	U	0.002	U	U	0 00087	J	J	0 00055	J	J			
Phenanthrene	mg/kg	2200	36000	250	0.00538			0.00199	U	U	0.0118	J	J	0.002	U	U	0.0107			0 00455					
Pyrene	mg/kg	2400	45000	880	0 0156			0.00199	U	U	0.0324			0 00323	J	J	0.0244			0.0343					
SEMIVOLATILES																									
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0 0734	U	U	0 0801	U	U	0.777	U	U	0.0812	U	U	0.0852	U	U	0.0727	U	U			
4-Nitrophenol	mg/kg	560	7900	0 3	0 0734	U	U	0 0801	U	U	0.777	U	U	0.0812	U	U	0.0852	U	U	0.0727	U	U			
Benzoic Acid	mg/kg	180000	#	110	0 0734	U	U	0 0801	U	U	0.777	U	U	0.0812	U	U	0.0852	U	U	0.0727	U	U			
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0 0183	U	U	0.02	U	U	0.194	U	U	0.0202	U	U	0.0113	J	J	0.0181	U	U			
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0 0157	J	J	0.02	U	U	0.194	U	U	0.0163	J	J	0.0207	J	J	0.0177	J	J			
Carbazole	mg/kg	49	240	0 2	0 0183	U	U	0.02	U	U	0.194	U	U	0.0202	U	U	0.0212	U	U	0.0181	U	U			
Dibutyl Phthalate	mg/kg	8200	170000	47	0 0183	U	U	0.02	U	U	0.194	U	U	0.0202	U	U	0.0212	U	U	0.0181	U	U			
Nitrosodiphenylamine	mg/kg	180	730	0.4	0 0183	U	U	0.02	U	U	0.194	U	U	0.0202	U	U	0.0212	U	U	0.0181	U	U			
Pyridine	mg/kg	20	130	0.03	0.183	U	U	0 2	U	U	1.94	U	U	0.202	U	U	0.212	U	U	0.181	U	U			
TRPH																									
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	19.4	U	U	21.2	U	U	2050	U	U	21.5	U	U	450	U	U	192	U	U			
VOLATILES																									
Dichloromethane	mg/kg	17	26	0.02	0.00227	U	U	0.00208	U	U	0 00231	U	U	0 00224	U	U	0 00211	U	U	0 00229	U	U			
Tetrachloroethylene (PCE)	mg/kg	8.8	18	0.03	0.00114	U	U	0.00104	U	U	0 00116	U	U	0 00112	U	U	0 00106	U	U	0 00114	U	U			

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location	B19SO-10		B19SO-10			B19SO-10			B19SO-11			B19SO-11			B19SO-11		
					Sample Designation	XB0031		XB0032			XB0033			XB0034			XB0035			XB0036		
					Collection Date	8/18/2016		8/18/2016			8/18/2016			8/18/2016			8/18/2016			8/18/2016		
					Depth (ft bgs)	0.5 -2		0.5 -2			2 -4			0 - 0.5			0.5 -2			2 -4		
					PID Reading (ppm)	0		0			0			0			0			0		
					Sample Purpose	REG		FD			REG			REG			REG			REG		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																						
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0.00982	U	U	0 0112	U	U	0 00197	U	U	0 00178	U	U	0 00204	U	U	0.0021	U	U
2-Methylnaphthalene	mg/kg	210	2100	8 5	0.00982	U	U	0 0112	U	U	0 00197	U	U	0 00178	U	U	0 00204	U	U	0.0021	U	U
Acenaphthene	mg/kg	2400	20000	2.1	0 0194	U	U	0 0222	U	U	0 00388	U	U	0 00352	U	U	0 00404	U	U	0 00415	U	U
Acenaphthylene	mg/kg	1800	20000	27	0 0151	J	J	0 0218	J	J	0 00683			0.0135			0 00404	U	U	0 00415	U	U
Anthracene	mg/kg	21000	300000	2500	0.00766	J	J	0 0192	J	J	0 00437			0 00326	J	J	0 00204	U	U	0.0021	U	U
Benzo(a)anthracene	mg/kg	#	#	0 8	0 0369		J	0.129		J	0.0153			0.0287			0 00404	U	U	0.0025	J	J
Benzo(a)pyrene	mg/kg	0.1	0.7	8	0 0482		J	0.103		J	0.0225			0.0468			0 00115	J	J	0 00355	J	J
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0 0887		J	0.154		J	0.0412			0.0643			0 00404	U	U	0 00584		
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0.034		J	0 0543		J	0.0132	J	J	0.0481			0 00204	U	U	0 00367	J	J
Benzo(k)fluoranthene	mg/kg	#	#	24	0 0298		J	0 0574		J	0.0133	J	J	0.0247			0 00065	J	J	0 00188	J	J
Chrysene	mg/kg	#	#	77	0 0559		J	0.123		J	0.0224			0.033			0 00404	U	U	0.003	J	J
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0 0194	U	U	0 0144	J	J	0.0194	U	U	0.0103			0 00404	U	U	0 00415	U	U
Fluoranthene	mg/kg	3200	59000	1200	0 0892		J	0.264		J	0.0242			0.0304			0 00066	J	J	0 00308	J	J
Fluorene	mg/kg	2600	33000	160	0.00982	U	U	0 0112	U	U	0 00088	J	J	0 00048	J	J	0 00204	U	U	0.0021	U	U
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6 6	0 0375		J	0 0751		J	0.0173	J	J	0.0536			0 00204	U	U	0 00379	J	J
Naphthalene	mg/kg	55	300	1 2	0.00432	J	J	0 0112	U	U	0 00118	J	J	0 00221	J	J	0 00204	U	U	0.0021	U	U
Phenanthrene	mg/kg	2200	36000	250	0 0433		J	0 0913		J	0 00511			0 00362			0 00204	U	U	0.0021	U	U
Pyrene	mg/kg	2400	45000	880	0 0681		J	0.186		J	0.0225			0.0265			0 00204	U	U	0 00297	J	J
SEMIVOLATILES																						
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0.788	U	U	0.896	U	UJ	0.0788	U	U	0.0716	U	U	0.0823	U	U	0.0843	U	U
4-Nitrophenol	mg/kg	560	7900	0 3	0.788	U	U	0.896	U	U	0.0788	U	U	0.0716	U	U	0.0823	U	U	0.0843	U	U
Benzoic Acid	mg/kg	180000	#	110	0.788	U	U	0.896	U	U	0.0788	U	U	0.0716	U	U	0.0823	U	U	0.0843	U	U
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0.196	U	U	0.223	U	U	0 00951	J	J	0.0112	J	J	0.0205	U	U	0.021	U	U
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0.115	J	J	0 0904	J	J	0.0367	J	J	0.0147	J	U	0.0205	U	U	0.0212	J	U
Carbazole	mg/kg	49	240	0 2	0.196	U	U	0.223	U	U	0.0197	U	U	0.0178	U	U	0.0205	U	U	0.021	U	U
Dibutyl Phthalate	mg/kg	8200	170000	47	0.196	U	U	0.223	U	U	0 00833	J	J	0.0178	U	U	0.0205	U	U	0.021	U	U
Nitrosodiphenylamine	mg/kg	180	730	0.4	0.196	U	U	0.223	U	U	0.0197	U	U	0.0178	U	U	0.0205	U	U	0.021	U	U
Pyridine	mg/kg	20	130	0.03	1.96	U	U	2.23	U	U	0.197	U	U	0.178	U	U	0.205	U	U	0 21	U	U
TRPH																						
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	415	U	U	480	UJ	U	417	U	U	189	U	U	21.7	U	U	22.3	U	U
VOLATILES																						
Dichloromethane	mg/kg	17	26	0.02	0.00256	U	U	0.00543	J	J	0 00234	U	U	0 00217	U	U	0 00215	U	U	0 00358	J	J
Tetrachloroethylene (PCE)	mg/kg	8.8	18	0.03	0.00128	U	U	0.00163	U	U	0 00117	U	U	0 00109	U	U	0 00108	U	U	0 00105	U	U

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

					Sample Location	B19SO-12			B19SO-12			B19SO-12			B19SO-12			B19SO-12		
					Sample Designation	XB0037			XB0038			XB0039			XB0040			XB0043		
					Collection Date	8/17/2016			8/17/2016			8/17/2016			8/17/2016			8/17/2016		
					Depth (ft bgs)	0 - 0.5			0.5 - 2			2 - 4			2 - 4			0.5 - 2		
					PID Reading (ppm)	0			0			0			0			0		
					Sample Purpose	REG			REG			FD			REG			FD		
Parameter	**Units**	**Residential**	**Industrial**	**Leachability**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
PAHs																			
1-Methyl Naphthalene	mg/kg	200	1800	3.1	0.00172	U	U	0.00184	U	U	0.00183	U	U	0.00199	U	U	0.0074	U	U
2-Methylnaphthalene	mg/kg	210	2100	8.5	0.0011	J	J	0.00184	U	U	0.00183	U	U	0.00199	U	U	0.0074	U	U
Acenaphthene	mg/kg	2400	20000	2.1	0.00339	U	U	0.00364	U	U	0.00362	U	U	0.00393	U	U	0.0074	U	U
Acenaphthylene	mg/kg	1800	20000	27	0.00723			0.00364	U	U	0.00362	U	U	0.00393	U	U	0.0053	J	J
Anthracene	mg/kg	21000	300000	2500	0.0092			0.00079	J	J	0.00183	U	U	0.00089	J	J	0.0027	J	J
Benzo(a)anthracene	mg/kg	#	#	0.8	0.0419			0.00444		J	0.00196	J	J	0.00585			0 015		
Benzo(a)pyrene	mg/kg	0.1	0.7	8	0.0498			0.00559		J	0.00216	J	J	0.00672			0 019		
Benzo(b)fluoranthene	mg/kg	#	#	2.4	0.111			0.0105		J	0.00419		J	0.0117			0.03		
Benzo(g,h,i)perylene	mg/kg	2500	52000	32000	0.0249			0.00313	J	J	0.00118	J	J	0 003	J	J	0 011		UJ
Benzo(k)fluoranthene	mg/kg	#	#	24	0.0362			0.00341	J	J	0.00133	J	J	0.00406			0 014		
Chrysene	mg/kg	#	#	77	0.0624			0.00594		J	0.00229	J	J	0.00679			0 017		
Dibenz(a,h)anthracene	mg/kg	#	#	0.7	0.00659			0.00364	U	U	0.00362	U	U	0.00393	U	U	0.0074	U	U
Fluoranthene	mg/kg	3200	59000	1200	0.0781			0.00821		J	0.00335	J	J	0.00894			0 028		
Fluorene	mg/kg	2600	33000	160	0.00065	J	J	0.00184	U	U	0.00183	U	U	0.00199	U	U	0.0074	U	U
Indeno(1,2,3-c,d)pyrene	mg/kg	#	#	6.6	0.031			0.00361	J	J	0.00141	J	J	0.00376	J	J	0.01		
Naphthalene	mg/kg	55	300	1.2	0.00134	J	J	0.00184	U	U	0.00183	U	U	0.00199	U	U	0.0074	U	U
Phenanthrene	mg/kg	2200	36000	250	0.0185			0.00189	J	J	0.00095	J	J	0.00165	J	J	0 006	J	J
Pyrene	mg/kg	2400	45000	880	0.072			0.00686		J	0.00285	J	J	0.00809			0 019		
SEMIVOLATILES																			
2,4-Dinitrophenol	mg/kg	110	1200	0.06	0.0687	UQ	UJ	0.0746	UQ	UJ	0.0741	UQ	UJ	0.0798	UQ	UJ	0 006	J	J
4-Nitrophenol	mg/kg	560	7900	0.3	0.0687	U	U	0.0746	U	U	0.0741	U	U	0.0798	U	U	0 019		
Benzoic Acid	mg/kg	180000	#	110	0.0687	UQ	U	0.0746	UQ	U	0.0741	UQ	U	0.0798	UQ	U	2.8	U	U
Benzyl Butyl Phthalate	mg/kg	17000	380000	310	0.0171	U	U	0.0186	U	U	0.0185	U	U	0.0199	U	U	0.74	U	U
Bis(2-Ethylhexyl)phthalate	mg/kg	72	390	3600	0.0195	J	U	0.0134	J	U	0.0136	J	U	0.0199	U	U	0.74	U	U
Carbazole	mg/kg	49	240	0.2	0.0171	U	U	0.0186	U	U	0.0185	U	U	0.0199	U	U	0.19	U	U
Dibutyl Phthalate	mg/kg	8200	170000	47	0.0171	U	U	0.0088	J	J	0.0185	U	U	0.0199	U	U	0.74	U	U
Nitrosodiphenylamine	mg/kg	180	730	0.4	0.0171	U	U	0.0186	U	U	0.0185	U	U	0.0199	U	U	0.47	J	J
Pyridine	mg/kg	20	130	0.03	0.171	U	U	0.186	U	U	0.185	U	U	0.199	U	U	0.74	U	U
TRPH																			
TRPH-FLPRO C8-C40	mg/kg	460	2700	340	180	U	U	23		J	19.4	U	UJ	20.4	J	J	29		
VOLATILES																			
Dichloromethane	mg/kg	17	26	0.02	0.00254	U	U	0.00214	U	U	0.00118	JJ	J	0.00158	J	J	0 002	U	U
Tetrachloroethylene (PCE)	mg/kg	8 8	18	0.03	0.00127	U	U	0.00107	U	U	0.00106	UJ	U	0.00144	U	U	0 002	U	U

Table 4-1

Summary of Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Residential criteria are he 62-777 F A.C. default residential direct exposure SCTLs (April 17, 2005).

Industrial criteria are the 62-777 F.A.C. default commercial/industrial direct exposure SCTLs (April 17, 2005).

Leachability criteria are the the Florida Administrative Code 62-777 leachability based on groundwater criteria SCTLs (April 17, 2005).

Notes:
ft bgs - Feet below ground surface.
FD - Field duplicate sample.
FID - Flame ionization detector.
LQ - Laboratory qualifier.
mg/kg - Milligrams per kilogram.
- Concentrations for carcinogenic polycyclic aromatic hydrocarbons must be converted to benzo(a)pyrene equivalents before comparison wi h the appropriate direct exposure SCTL for benzo(a)pyrene using the approach described in the February 2005 Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, F.A.C.
PAH - Polynuclear aromatic hydrocarbon.
REG - Regular sample.
TRPH - Total recoverable petroleum hydrocarbons.
VQ - Validation qualifier.
Bold font - The detected concentration exceeds residential direct exposure SCTLs.

Laboratory Qualifiers
J - Es imated value - Indicates result between the MDL and LOQ. Also, DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria.
Q - Indicates a non-compliant QC Result.
U - Not detected.

Validation Qualifiers
J - The analyte was positively identified; he reported value is the estimated concentration of the constituent detected in he sample analyzed.
U - Not detected. The analyte was analyzed for, but not detected above the associated detection limit; or above the reported concentration due to blank contamination.
UJ - The analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated.

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0001	XB0002	XB0003	XB0004	XB0005	XB0006	XB0008	XB0009	XB0011	XB0012
	Sample Date	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016
	Sample Location:	B19SO-01	B19SO-01	B19SO-01	B19SO-01	B19SO-02	B19SO-02	B19SO-03	B19SO-03	B19SO-04	B19SO-04
	Depth (ft):	0.0-0.5	0.5-2.0	0.5-2.0	2.0-4.0	0.5-2.0	0.5-2.0	0.0-0.5	0.5-2 0	0.0-0.5	0.5-2.0
Contaminant Concentrations											
Contaminant	**TEF**	XB0001 (mg/kg)	XB0002 (mg/kg)	XB0003 (mg/kg)	XB0004 (mg/kg)	XB0005 (mg/kg)	XB0006 (mg/kg)	XB0008 (mg/kg)	XB0009 (mg/kg)	XB0011 (mg/kg)	XB0012 (mg/kg)
Benzo(a)pyrene	1 0	0.228	0.00057	0.001	0.00078	0.0907	0.00572	0.0505	0 00577	0.058	0 00112
Benzo(a)anthracene	0.1	0.0308	0.0021	0.0022	0.002	0.0412	0.00481	0.0429	0 0383	0.0602	0.0019
Benzo(b)fluoranthene	0.1	0.284	0.0021	0.0022	0.002	0.143	0.00959	0.0805	0 00927	0.147	0.0019
Benzo(k)fluoran hene	0.01	0.0978	0.0011	0.000636	0.001	0.0418	0.00321	0.0283	0 00344	0.0472	0.000647
Chrysene	0.001	0.0456	0.0021	0.0022	0.002	0.0581	0.00548	0.0524	0 00749	0.0804	0 0019
Dibenz(a,h)anthracene	1 0	0.0361	0.0021	0.0022	0.002	0.0183	0.0018	0.0087	0 0018	0.0138	0 0019
Indeno(1,2,3-cd)pyrene	0.1	0.175	0.0011	0.000668	0.000885	0.084	0.00475	0.0392	0 00552	0.0752	0.000982
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0001 (mg/kg)	XB0002 (mg/kg)	XB0003 (mg/kg)	XB0004 (mg/kg)	XB0005 (mg/kg)	XB0006 (mg/kg)	XB0008 (mg/kg)	XB0009 (mg/kg)	XB0011 (mg/kg)	XB0012 (mg/kg)
Benzo(a)pyrene	1 0	0.2280	0.0006	0.0010	0.0008	0.0907	0.0057	0.0505	0 0058	0.0580	0.0011
Benzo(a)anthracene	0.1	0.0031	0.0002	0.0002	0.0002	0.0041	0.0005	0.0043	0 0038	0.0060	0.0002
Benzo(b)fluoranthene	0.1	0.0284	0.0002	0.0002	0.0002	0.0143	0.0010	0.0081	0 0009	0.0147	0.0002
Benzo(k)fluoran hene	0.01	0.0010	0.0000	0.0000	0.0000	0.0004	0.0000	0.0003	0 0000	0.0005	0.0000
Chrysene	0.001	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001	0 0000	0.0001	0.0000
Dibenz(a,h)anthracene	1 0	0.0361	0.0021	0.0022	0.0020	0.0183	0.0018	0.0087	0 0018	0.0138	0.0019
Indeno(1,2,3-cd)pyrene	0.1	0.0175	0.0001	0.0001	0.0001	0.0084	0.0005	0.0039	0 0006	0.0075	0 0001
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.3**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.1**	**0.0**	**0.1**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0001 (mg/kg)**	**XB0002 (mg/kg)**	**XB0003 (mg/kg)**	**XB0004 (mg/kg)**	**XB0005 (mg/kg)**	**XB0006 (mg/kg)**	**XB0008 (mg/kg)**	**XB0009 (mg/kg)**	**XB0011 (mg/kg)**	**XB0012 (mg/kg)**
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0014	XB0015	XB0016	XB0017	XB0018	XB0019	XB0021	XB0022	XB0023	XB0024
	Sample Date	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/18/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016
	Sample Location:	B19SO-05	B19SO-05	B19SO-05	B19SO-05	B19SO-06	B19SO-06	B19SO-07	B19SO-07	B19SO-07	B19SO-08
	Depth (ft):	0.0-0.5	0.0-0.5	0.5-2.0	2.0-4.0	0.0-0.5	0.5-2.0	0.0-0.5	0.5-2 0	2.0-4.0	0.0-0.5
Contaminant Concentrations											
Contaminant	**TEF**	XB0014 (mg/kg)	XB0015 (mg/kg)	XB0016 (mg/kg)	XB0017 (mg/kg)	XB0018 (mg/kg)	XB0019 (mg/kg)	XB0021 (mg/kg)	XB0022 (mg/kg)	XB0023 (mg/kg)	XB0024 (mg/kg)
Benzo(a)pyrene	1 0	0.0888	0.0821	0.00919	0.00506	0.219	0.000627	0.129	0 0573	0.00174	0.0834
Benzo(a)anthracene	0.1	0.0539	0.0535	0.00587	0.00347	0.135	0.0017	0.105	0 00449	0.0021	0.0655
Benzo(b)fluoranthene	0.1	0.133	0.142	0.0143	0.00766	0.29	0.0017	0.209	0 00837	0.00314	0.139
Benzo(k)fluoranthene	0.01	0.0452	0.0471	0.00522	0.00268	0.105	0.0009	0.0743	0 00432	0.00108	0.0504
Chrysene	0.001	0.0637	0.0804	0.00768	0.00378	0.153	0.0017	0.118	0 00488	0.0021	0.0932
Dibenz(a,h)anthracene	1 0	0.0102	0.00993	0.0022	0.002	0.0321	0.0017	0.0161	0.002	0.0021	0 0133
Indeno(1,2,3-cd)pyrene	0.1	0.0606	0.0535	0.00705	0.00374	0.183	0.0009	0.0764	0 0042	0.00129	0 0789
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0014 (mg/kg)	XB0015 (mg/kg)	XB0016 (mg/kg)	XB0017 (mg/kg)	XB0018 (mg/kg)	XB0019 (mg/kg)	XB0021 (mg/kg)	XB0022 (mg/kg)	XB0023 (mg/kg)	XB0024 (mg/kg)
Benzo(a)pyrene	1 0	0.0888	0.0821	0.0092	0.0051	0.2190	0.0006	0.1290	0 0573	0.0017	0.0834
Benzo(a)anthracene	0.1	0.0054	0.0054	0.0006	0.0003	0.0135	0.0002	0.0105	0 0004	0.0002	0.0066
Benzo(b)fluoranthene	0.1	0.0133	0.0142	0.0014	0.0008	0.0290	0.0002	0.0209	0 0008	0.0003	0.0139
Benzo(k)fluoran hene	0.01	0.0005	0.0005	0.0001	0.0000	0.0011	0.0000	0.0007	0 0000	0.0000	0.0005
Chrysene	0.001	0.0001	0.0001	0.0000	0.0000	0.0002	0.0000	0.0001	0 0000	0.0000	0.0001
Dibenz(a,h)anthracene	1 0	0.0102	0.0099	0.0022	0.0020	0.0321	0.0017	0.0161	0 0020	0.0021	0.0133
Indeno(1,2,3-cd)pyrene	0.1	0.0061	0.0054	0.0007	0.0004	0.0183	0.0001	0.0076	0 0004	0.0001	0 0079
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.1**	**0.1**	**0.0**	**0.0**	**0.3**	**0.0**	**0.2**	**0.1**	**0.0**	**0.1**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0014 (mg/kg)**	**XB0015 (mg/kg)**	**XB0016 (mg/kg)**	**XB0017 (mg/kg)**	**XB0018 (mg/kg)**	**XB0019 (mg/kg)**	**XB0021 (mg/kg)**	**XB0022 (mg/kg)**	**XB0023 (mg/kg)**	**XB0024 (mg/kg)**
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0025	XB0027	XB0028	XB0029	XB0030	XB0031	XB0032	XB0033	XB0034	XB0035
	Sample Date	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016
	Sample Location:	B19SO-08	B19SO-09	B19SO-09	B19SO-09	B19SO-10	B19SO-10	B19SO-10	B19SO-10	B19SO-11	B19SO-11
	Depth (ft):	0.5-2.0	0.0-0.5	0.5-2.0	2.0-4.0	0.0-0.5	0.5-2.0	0.5-2.0	2.0-4 0	0.0-0.5	0.5-2.0
Contaminant Concentrations											
Contaminant	**TEF**	XB0025 (mg/kg)	XB0027 (mg/kg)	XB0028 (mg/kg)	XB0029 (mg/kg)	XB0030 (mg/kg)	XB0031 (mg/kg)	XB0032 (mg/kg)	XB0033 (mg/kg)	XB0034 (mg/kg)	XB0035 (mg/kg)
Benzo(a)pyrene	1 0	0.0105	0.0287	0.00346	0.0165	0.0282	0.0482	0.103	0 0225	0.0468	0 00115
Benzo(a)anthracene	0.1	0.00874	0.0217	0.0035	0.0139	0.0213	0.0369	0.129	0 0153	0.0287	0 002
Benzo(b)fluoranthene	0.1	0.0175	0.0439	0.00546	0.0293	0.0534	0.0887	0.154	0 0412	0.0643	0 002
Benzo(k)fluoran hene	0.01	0.00621	0.0151	0.00204	0.00965	0.0174	0.0298	0.0574	0 0133	0.0247	0 00065
Chrysene	0 001	0.0126	0.0281	0.00399	0.0187	0.0276	0.0559	0.123	0 0224	0.033	0.002
Dibenz(a,h)anthracene	1 0	0.0018	0.0096	0.00199	0.00249	0.00417	0.0097	0.0144	0 0097	0.0103	0.002
Indeno(1,2,3-cd)pyrene	0.1	0.00912	0.0229	0.0025	0.0122	0.0204	0.0375	0.0751	0 0173	0.0536	0.001
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0025 (mg/kg)	XB0027 (mg/kg)	XB0028 (mg/kg)	XB0029 (mg/kg)	XB0030 (mg/kg)	XB0031 (mg/kg)	XB0032 (mg/kg)	XB0033 (mg/kg)	XB0034 (mg/kg)	XB0035 (mg/kg)
Benzo(a)pyrene	1 0	0.0105	0.0287	0.0035	0.0165	0.0282	0.0482	0.1030	0 0225	0.0468	0.0012
Benzo(a)anthracene	0.1	0.0009	0.0022	0.0004	0.0014	0.0021	0.0037	0.0129	0 0015	0.0029	0.0002
Benzo(b)fluoranthene	0.1	0.0018	0.0044	0.0005	0.0029	0.0053	0.0089	0.0154	0 0041	0.0064	0.0002
Benzo(k)fluoran hene	0.01	0.0001	0.0002	0.0000	0.0001	0.0002	0.0003	0.0006	0 0001	0.0002	0.0000
Chrysene	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0 0000	0.0000	0.0000
Dibenz(a,h)anthracene	1 0	0.0018	0.0096	0.0020	0.0025	0.0042	0.0097	0.0144	0 0097	0.0103	0.0020
Indeno(1,2,3-cd)pyrene	0.1	0.0009	0.0023	0.0003	0.0012	0.0020	0.0038	0.0075	0 0017	0.0054	0 0001
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.2**	**0.0**	**0.1**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0025 (mg/kg)**	**XB0027 (mg/kg)**	**XB0028 (mg/kg)**	**XB0029 (mg/kg)**	**XB0030 (mg/kg)**	**XB0031 (mg/kg)**	**XB0032 (mg/kg)**	**XB0033 (mg/kg)**	**XB0034 (mg/kg)**	**XB0035 (mg/kg)**
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0036	XB0037	XB0038	XB0039	XB0040					
	Sample Date	8/18/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016					
	Sample Location:	B19SO-11	B19SO-12	B19SO-12	B19SO-12	B19SO-12					
	Depth (ft):	2.0-4.0	0.0-0.5	0.5-2.0	2.0-4.0	2.0-4.0					
Contaminant Concentrations											
Contaminant	**TEF**	XB0036 (mg/kg)	XB0037 (mg/kg)	XB0038 (mg/kg)	XB0039 (mg/kg)	XB0040 (mg/kg)					
Benzo(a)pyrene	1 0	0.00355	0.0498	0.00559	0.00216	0.00672					
Benzo(a)anthracene	0.1	0.0025	0.0419	0.00444	0.00196	0.00585					
Benzo(b)fluoranthene	0.1	0.00584	0.111	0.0105	0.00419	0.0117					
Benzo(k)fluoranthene	0.01	0.00188	0.0362	0.00341	0.00133	0.00406					
Chrysene	0.001	0.003	0.0624	0.00594	0.00229	0.00679					
Dibenz(a,h)anthracene	1 0	0.0021	0.00659	0.0018	0.0018	0.002					
Indeno(1,2,3-cd)pyrene	0.1	0.00379	0.031	0.00361	0.00141	0.00376					
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0036 (mg/kg)	XB0037 (mg/kg)	XB0038 (mg/kg)	XB0039 (mg/kg)	XB0040 (mg/kg)					
Benzo(a)pyrene	1 0	0.0036	0.0498	0.0056	0.0022	0.0067	0.0000	0.0000	0 0000	0.0000	0.0000
Benzo(a)anthracene	0.1	0.0003	0.0042	0.0004	0.0002	0.0006	0.0000	0.0000	0 0000	0.0000	0.0000
Benzo(b)fluoranthene	0.1	0.0006	0.0111	0.0011	0.0004	0.0012	0.0000	0.0000	0 0000	0.0000	0.0000
Benzo(k)fluoranthene	0.01	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0 0000	0.0000	0.0000
Chrysene	0.001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0 0000	0.0000	0.0000
Dibenz(a,h)anthracene	1 0	0.0021	0.0066	0.0018	0.0018	0.0020	0.0000	0.0000	0 0000	0.0000	0.0000
Indeno(1,2,3-cd)pyrene	0.1	0.0004	0.0031	0.0004	0.0001	0.0004	0.0000	0.0000	0 0000	0.0000	0.0000
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.0**	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0036 (mg/kg)**	**XB0037 (mg/kg)**	**XB0038 (mg/kg)**	**XB0039 (mg/kg)**	**XB0040 (mg/kg)**					
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Table 4-3

Summary of Laboratory Reported Nondetect TRPH Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Location Code	Sample Number	Sample Date	Matrix	Sample Purpose	Start Depth (ft bgs)	End Depth (ft bgs)	Laboratory Sample ID	Parameter	Residential SCTL	Industrial SCTL	Leachability SCTL	Result	LOD	LOQ	DL	Unit	LQ	VQ	Dilution
B19SO-03	XB0008	08/18/16	SOIL	REG	0	0.5	21608190301	TRPH-FLPRO	460	2700	340	*373*	*373*	*373*	211	mg/kg	U	U	20
B19SO-03	XB0010	08/18/16	SOIL	REG	2	4	21608190303	TRPH-FLPRO	460	2700	340	20.7	20.7	20.7	11.7	mg/kg	U	U	1
B19SO-04	XB0011	08/18/16	SOIL	REG	0	0.5	21608190304	TRPH-FLPRO	460	2700	340	*402*	*402*	*402*	227	mg/kg	U	U	20
B19SO-04	XB0013	08/18/16	SOIL	REG	2	4	21608190306	TRPH-FLPRO	460	2700	340	22.2	22.2	22.2	12.5	mg/kg	U	U	1
B19SO-06	XB0018	08/18/16	SOIL	REG	0	0.5	21608190307	TRPH-FLPRO	460	2700	340	250	250	250	142	mg/kg	U	U	10
B19SO-06	XB0019	08/18/16	SOIL	REG	0.5	2	21608190308	TRPH-FLPRO	460	2700	340	18.6	18.6	18.6	10.5	mg/kg	U	U	1
B19SO-06	XB0020	08/18/16	SOIL	REG	2	4	21608190309	TRPH-FLPRO	460	2700	340	19.9	19.9	19.9	11.2	mg/kg	U	U	1
B19SO-08	XB0024	08/18/16	SOIL	REG	0	0.5	21608190310	TRPH-FLPRO	460	2700	340	*376*	*376*	*376*	213	mg/kg	U	U	20
B19SO-08	XB0025	08/18/16	SOIL	REG	0.5	2	21608190311	TRPH-FLPRO	460	2700	340	19.4	19.4	19.4	11	mg/kg	U	U	1
B19SO-08	XB0026	08/18/16	SOIL	REG	2	4	21608190312	TRPH-FLPRO	460	2700	340	21.2	21.2	21.2	12	mg/kg	U	U	1
B19SO-09	XB0027	08/18/16	SOIL	REG	0	0.5	21608190313	TRPH-FLPRO	460	2700	340	*2050*	*2050*	*2050*	*1160*	mg/kg	U	U	100
B19SO-09	XB0028	08/18/16	SOIL	REG	0.5	2	21608190314	TRPH-FLPRO	460	2700	340	21.5	21.5	21.5	12.2	mg/kg	U	U	1
B19SO-09	XB0029	08/18/16	SOIL	REG	2	4	21608190315	TRPH-FLPRO	460	2700	340	*450*	*450*	*450*	254	mg/kg	U	U	20
B19SO-10	XB0030	08/18/16	SOIL	REG	0	0.5	21608190316	TRPH-FLPRO	460	2700	340	192	192	192	108	mg/kg	U	U	10

Table 4-3

Summary of Laboratory Reported Nondetect TRPH Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Location Code	Sample Number	Sample Date	Matrix	Sample Purpose	Start Depth (ft bgs)	End Depth (ft bgs)	Laboratory Sample ID	Parameter	Residential SCTL	Industrial SCTL	Leachability SCTL	Result	LOD	LOQ	DL	Unit	LQ	VQ	Dilution
B19SO-10	XB0031	08/18/16	SOIL	REG	0.5	2	21608190317	TRPH-FLPRO	460	2700	340	*415*	*415*	*415*	234	mg/kg	U	U	20
B19SO-10	XB0032	08/18/16	SOIL	FD	0.5	2	21608190322	TRPH-FLPRO	460	2700	340	*480*	*480*	*480*	271	mg/kg	UJ	U	20
B19SO-10	XB0033	08/18/16	SOIL	REG	2	4	21608190318	TRPH-FLPRO	460	2700	340	*417*	*417*	*417*	235	mg/kg	U	U	20
B19SO-11	XB0034	08/18/16	SOIL	REG	0	0.5	21608190319	TRPH-FLPRO	460	2700	340	189	189	189	107	mg/kg	U	U	10
B19SO-11	XB0035	08/18/16	SOIL	REG	0.5	2	21608190320	TRPH-FLPRO	460	2700	340	21.7	21.7	21.7	12.2	mg/kg	U	U	1
B19SO-11	XB0036	08/18/16	SOIL	REG	2	4	21608190321	TRPH-FLPRO	460	2700	340	22.3	22.3	22.3	12.6	mg/kg	U	U	1

Table 4-3

Summary of Laboratory Reported Nondetect TRPH Soil Analytical Results
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Notes:

ft bgs - Feet below ground surface.

REG - Regular sample.

FD - Field duplicate sample.

SCTL - Soil cleanup target level.

LOQ - Limit of quantitation.

LOD - Limit of detection.

DL - Detection limit.

LQ - Laboratory qualifier.

VQ - Validation qualifier.

mg/kg - milligrams per kilogram.

TRPH - Total recoverable petroleum hydrocarbons.

Laboratory Qualifiers

J - Estimated value - Indicates result bewteen the LOQ and the DL. Also, DOD flag on analyte in the parent sample for MS/MSD outside accpetance criteria.

U - Not detected.

Validation Qualifiers

J - The analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed.

U - Not detected. The analyte was analyzed for, but not detected above the reported sample quanitation limit (LOQ); or above the reported concentration due to blank contamination.

	Result not detected above the laboratory's DL. Laboratory DL is below leachability screening criteria.
	Result not detected above the laboratory's DL. However, the laboratory's DL is below the industrial screening criteria but above the leachability screening criteria.
BOLD	Value is above the Residential SCTL
italics	Value is above the Leachability SCTL

Semivolatiles Gas Chromatography

In the FL PRO and Rev. 1 analysis, a dilution was required for samples 21608190307 (XB0018), 21608190316 (XB0030), 21608190319 (XB0034), 21608190313 (XB0027), 21608190317 (XB0031), 21608190301 (XB0008), 21608190304 (XB0011), 21608190310 (XB0024), 21608190315 (XB0029), 21608190318 (XB0033) and 21608190322 (XB0032) to eliminate interference from non-target background. This dilution is reflected in elevated detection limits. The recovery for the surrogate(s) is reported as diluted out for those analyses performed at a 10 or higher dilution.

Table 4-4

Summary of Groundwater Analytical Results
(Monitoring Wells)
Building 19 Underground Storage Tank Area
Green Cove Springs, Florida

	Sample Location		UST19-MW01			UST19-MW01			UST19-MW02			UST19-MW02			UST19-MW02		
	Sample Designation		XB3009			XB3010			XB3011			XB3020			XB3021		
	Collection Date		9/15/2016			9/15/2016			9/15/2016			12/18/2018			12/18/2018		
	Depth (ft bgs)		7.3			7.3			7.1			7			7		
	Sample Purpose		REG			FD			REG			REG			FD		
Parameter	**Units**	**GCTL**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
FIELD MEASUREMENTS																	
Conductivity	mS/m	NV	.61			.61			.440			0.396			0.396		
Depth to Water	Ft	NV	3.4			3.4			6.6			3.67			3.67		
Dissolved oxygen	mg/L	NV	0.16			0.16			0.62			0.62			0.62		
Oxidation-Reduction Potential	mV	NV	-0.7			-0.7			34			-44			-44		
pH	STD UNIT	NV	6.55			6.55			6.65			7.74			7.74		
Purge Rate	ML/M	NV	.09			.09			.06			.05			.05		
Temperature	C	NV	28.9			28.9			28.5			20.9			20.9		
Turbidity	NTU	NV	1			1			4			9.22			9.22		
PAHs																	
Naphthalene	µg/L	14	0.05	U	U	0.014	J	J	0.031	JJ	J	0.052	U	U	0.051	U	U
TRPH																	
TRPH-FLPRO C8-C40	µg/L	5000	429	U	U	256	J	J	128	J	J	NS			NS		
VOLATILES																	
Carbon Disulfide	µg/L	700	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 4-4

Summary of Groundwater Analytical Results
(Monitoring Wells)
Building 19 Underground Storage Tank Area
Green Cove Springs, Florida

			Sample Location	UST19-MW03			UST19-MW04			UST19-MW05			UST19-MW06			UST19-MW07		
			Sample Designation	XB3012			XB3013			XB3014			XB3015			XB3016		
			Collection Date	9/14/2016			9/14/2016			9/15/2016			9/14/2016			9/15/2016		
			Depth (ft bgs)	7.5			7.6			7.6			7.0			32.5		
			Sample Purpose	REG			REG			REG			REG			REG		
Parameter	**Units**	**GCTL**		**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
FIELD MEASUREMENTS																		
Conductivity	mS/m	NV		.43			.363			.409			.63			.77		
Depth to Water	Ft	NV		7.1			7.2			5.3			0.1			7.55		
Dissolved oxygen	mg/L	NV		0.35			1.99			0.2			0.18			0.25		
Oxidation-Reduction Potential	mV	NV		1			58.5			18.6			20.4			1.4		
pH	STD UNIT	NV		6.35			6.58			6.96			6.43			6.52		
Purge Rate	ML/M	NV		0.15			.12			.05			0.1			.06		
Temperature	C	NV		32.1			30.6			31.5			29.1			25.1		
Turbidity	NTU	NV		15			4			3			10			3.6		
PAHs																		
Naphthalene	µg/L	14		0.013	J	J	0.05	U	U	0.025	J	J	0.018	J	J	0.05	U	U
TRPH																		
TRPH-FLPRO C8-C40	µg/L	5000		425	UQ	UJ	425	UQ	UJ	180	J	J	434	UQ	UJ	318	J	J
VOLATILES																		
Carbon Disulfide	µg/L	700		0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.507	J	J

Table 4-4

Summary of Groundwater Analytical Results
(Monitoring Wells)
Building 19 Underground Storage Tank Area
Green Cove Springs, Florida

GCTLs are the Florida Administrative Code 62-777 groundwater cleanup target levels (April 17, 2005).

Notes:
°C - Degrees Celcius.
FT - Feet.
ft bgs - Feet below ground surface.
FD - Field duplicate sample.
LQ - Laboratory qualifier.
mS/m - Microsiemens per meter.
mV - Millivolt.
mg/L - Milligrams per liter.
ML/M - Milliliters per minute.
µg/L - Micrograms per liter.
NV - No value.
NTU - Nephelometric turbidity unit.
PAH - Polynuclear aromatic hydrocarbon.
REG - Regular sample.
STD UNIT - Standard Unit.
TRPH - Total recoverable petroleum hydrocarbons.
VQ - Validation qualifier.
NS - Not sampled for that parameter.

Laboratory Qualifiers
J - Estimated value - Indicates result between the MDL and LOQ. Also, DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria.
U - Not detected.
Q - Indicates a non-compliant QC Result.

Validation Qualifiers
J - The analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed.
U - Not detected. The analyte was analyzed for, but not detected above the associated detection limit; or above the reported concentration contamination. The sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. due to blank The blank detect result should be estimated.

Table 4-5

Summary of Groundwater Analytical Results
(Monitoring Wells)
Building 19 Underground Storage Tank Area
Green Cove Springs, Florida

	Sample Location		UST19-MW01			UST19-MW01			UST19-MW02			UST19-MW03		
	Sample Designation		XB3009			XB3010			XB3011			XB3012		
	Collection Date		9/15/2016			9/15/2016			9/15/2016			9/14/2016		
	Depth (ft bgs)		7.3			7.3			7.1			7.5		
	Sample Purpose		REG			FD			REG			REG		
Parameter	**Units**	**GCTL**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
FIELD MEASUREMENTS														
Conductivity	mS/m	NV	.61			.61			.440			.43		
Depth to Water	Ft	NV	3.4			3.4			6.6			7.1		
Dissolved oxygen	mg/L	NV	0.16			0.16			0.62			0.35		
Oxidation-Reduction Potential	mV	NV	-0.7			-0.7			34			1		
pH	STD UNIT	NV	6.55			6.55			6.65			6.35		
Purge Rate	ML/M	NV	.09			.09			.06			0.15		
Temperature	C	NV	28.9			28.9			28.5			32.1		
Turbidity	NTU	NV	1			1			4			15		
PAHs														
Naphthalene	µg/L	14	0.05	U	U	0.014	J	J	0.031	JJ	J	0.013	J	J
TRPH														
TRPH-FLPRO C8-C40	µg/L	5000	429	U	U	256	J	J	128	J	J	425	UQ	UJ
VOLATILES														
Carbon Disulfide	µg/L	700	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 4-5

Summary of Groundwater Analytical Results
(Monitoring Wells)
Building 19 Underground Storage Tank Area
Green Cove Springs, Florida

			Sample Location	UST19-MW04			UST19-MW05			UST19-MW06			UST19-MW07		
			Sample Designation	XB3013			XB3014			XB3015			XB3016		
			Collection Date	9/14/2016			9/15/2016			9/14/2016			9/15/2016		
			Depth (ft bgs)	7.6			7.6			7.0			32.5		
			Sample Purpose	REG			REG			REG			REG		
Parameter	**Units**	**GCTL**		**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
FIELD MEASUREMENTS															
Conductivity	mS/m	NV		.363			.409			.63			.77		
Depth to Water	Ft	NV		7.2			5.3			0.1			7.55		
Dissolved oxygen	mg/L	NV		1.99			0.2			0.18			0.25		
Oxidation-Reduction Potential	mV	NV		58.5			18.6			20.4			1.4		
pH	STD UNIT	NV		6.58			6.96			6.43			6.52		
Purge Rate	ML/M	NV		.12			.05			0.1			.06		
Temperature	C	NV		30.6			31.5			29.1			25.1		
Turbidity	NTU	NV		4			3			10			3.6		
PAHs															
Naphthalene	µg/L	14		0.05	U	U	0.025	J	J	0.018	J	J	0.05	U	U
TRPH															
TRPH-FLPRO C8-C40	µg/L	5000		425	UQ	UJ	180	J	J	434	UQ	UJ	318	J	J
VOLATILES															
Carbon Disulfide	µg/L	700		0.5	U	U	0.5	U	U	0.5	U	U	0.507	J	J

Table 4-5

Summary of Groundwater Analytical Results
(Monitoring Wells)
Building 19 Underground Storage Tank Area
Green Cove Springs, Florida

GCTLs are the Florida Administrative Code 62-777 groundwater cleanup target levels (April 17, 2005).

Notes:
°C - Degrees Celcius.
FT - Feet.
ft bgs - Feet below ground surface.
FD - Field duplicate sample.
LQ - Laboratory qualifier.
mS/m - Microsiemens per meter.
mV - Millivolt.
mg/L - Milligrams per liter.
ML/M - Milliliters per minute.
µg/L - Micrograms per liter.
NV - No value.
NTU - Nephelometric turbidity unit.
PAH - Polynuclear aromatic hydrocarbon.
REG - Regular sample.
STD UNIT - Standard Unit.
TRPH - Total recoverable petroleum hydrocarbons.
VQ - Validation qualifier.

Laboratory Qualifiers
J - Estimated value - Indicates result bewteen the MDL and LOQ. Also, DOD flag on analyte in the parent sample for MS/MSD

U - Not detected
outside acceptance criteria.
Q - Indicates a non-compliant QC Result.

Validation Qualifiers
J - The analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed.
U - Not detected. The analyte was analyzed for, but not detected above the associated detection limit; or above the reported concentration
sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise.

due to blank contamination. The
The nondetect result should be estimated.

Table 4-6

Groundwater Elevation Data
Building 19 Underground Storage Tank Area
Former Lee Field Naval Air Station
Green Cove Springs, Florida

Well Identification	Casing Diameter (inches)	Ground Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft bgs)	Well Depth (ft bgs)	Date Measured	Depth to Water (ft BTOC)	Groundwater Elevation (ft AMSL)
UST19-MW01	2	NA	12.34	2	12	9/15/2016	3.69	8.65
UST19-MW02	2	13.3	12.87	2	12	9/15/2016	3.99	8.88
UST19-MW03	2	12.9	12.79	2	12	9/14/2016	4.04	8.75
UST19-MW04	2	13.0	12.70	2	12	9/14/2016	4.31	8.39
UST19-MW05	1	12.6	12.46	2	12	9/15/2016	4.19	8.27
UST19-MW06	1	13.2	12.90	2	12	9/14/2016	3.30	9.60
SPAMW-007	2	12.5	11.92	2	12	9/14/2016	3.93	7.99
UST19-MW07	1	13.4	13.14	30	35	9/15/2016	5.31	7.83

Notes:

DPT - Direct-push technology.

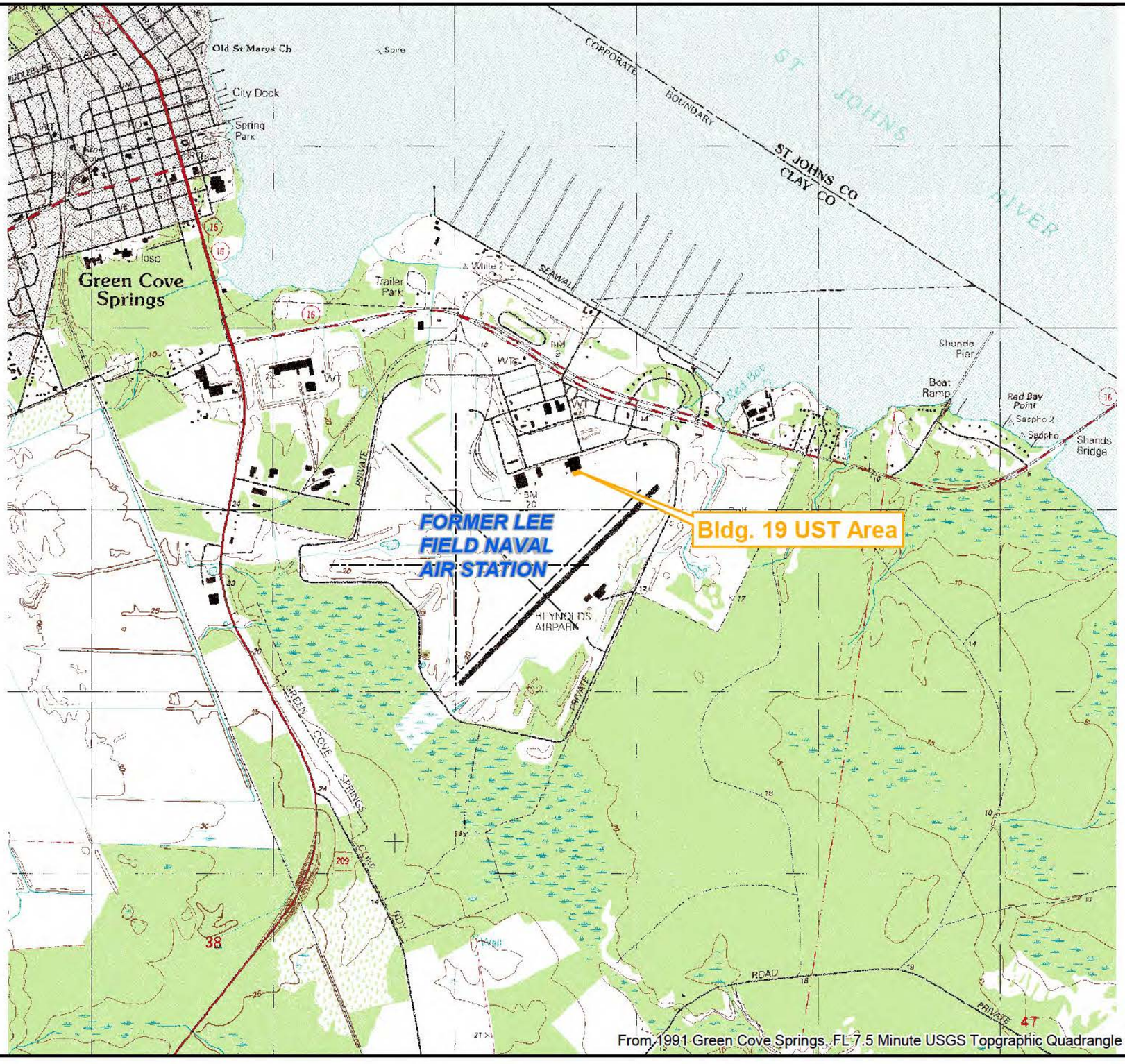
ft AMSL - Feet above mean sea level.

ft bgs - Feet below ground surface.

ft BTOC - Feet below top of casing.

SPAMW-007 is assocated with the Service Pit Area site.

FIGURES



From 1991 Green Cove Springs, FL 7.5 Minute USGS Topgraphic Quadrangle Map

QUADRANGLE LOCATION

1 inch = 2,000 feet

0 1,000 2,000 4,000 Feet

NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 1-1

Topographic Site Location Map

Former Lee Field Naval Air Station
Green Cove Springs, FL

9/26/2018 | Author: marla.hall | Reviewer: S. Smith | G:\Lee Field\GIS Documents\Project Maps\Bldg19 UST Area\Bldg19 UST Area Site Assessment Report\Bldg19UST Topographic Site Location Map.mxd

Legend

- Excavation Area
- Former UST
- Site Boundary

1 inch = 40 feet

0 20 40 80 Feet

NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 1-2

Site Plan Map
Building 19 UST Area

Former Lee Field Naval Air Station
Green Cove Springs, FL

9/26/2018 | Author: marla.hall | Reviewer: S. Smith | G:\Lee Field\GIS Documental\Project Maps\Bldg19 UST Area\Bldg19 UST Area Site Assessment Report\Bldg19UST Site Plan Map.mxd

Legend

Historical Sample Locations

- Monitoring Well
- Direct Push
- Hydropunch
- Soil Boring
- Site Boundary

1 inch = 40 feet

0 20 40 80 Feet

NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 2-1

Historical Sampling Locations
Building 19 UST Area

Former Lee Field Naval Air Station
Green Cove Springs, FL

9/26/2018 | Author: marla.hall | Reviewer: S. Smith | G:\Lee Field\GIS Documents\Project Maps\Bldg19 UST Area\Bldg19 UST Area Site Assessment Report\Bldg19UST Area Historical Sampling Locations.mxd

Legend

- Soil Boring
- Site Boundary

1 inch = 40 feet

0 20 40 80 Feet

NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 4-1

Soil Sampling Locations
Building 19 UST Area

Former Lee Field Naval Air Station
Green Cove Springs, FL

9/26/2018 | Author: marta.hall | Reviewer: S. Smith | G:\Lee Field\GIS Documents\Project Maps\Bldg19 UST Area\Bldg19 UST Area Site Assessment Report\Bldg19UST Area Soil Sampling Locations.mxd

Legend

- Monitoring Well
- Direct Push
- Site Boundary

1 inch = 40 feet

0 20 40 80 Feet

NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 4-2

Groundwater Sampling Locations
Building 19 UST Area

Former Lee Field Naval Air Station
Green Cove Springs, FL

9/26/2018 | Author: marla.hall | Reviewer: S. Smith | G:\Lee Field\GIS Documents\Project Maps\Bldg19 UST Area\Bldg19 UST Area Site Assessment Report\Bldg19UST Area GW Sampling Locations.mxd

Legend

- Monitoring Well
- Potentiometric Surface Contours
- (dashed where inferred)
- 8.65 Groundwater Elevation (FT AMSL)
- Groundwater Flow Direction
- Site Boundary

Notes:

Potentiometric water level survey conducted on September 14 and 15, 2016.

SPAMW-007 is associated with the Service Pit Area Site.

UST19-MW07 groundwater elevation 7.83 not used for contouring.

FT AMSL - feet above mean sea level

1 inch = 40 feet

0 20 40 80 Feet

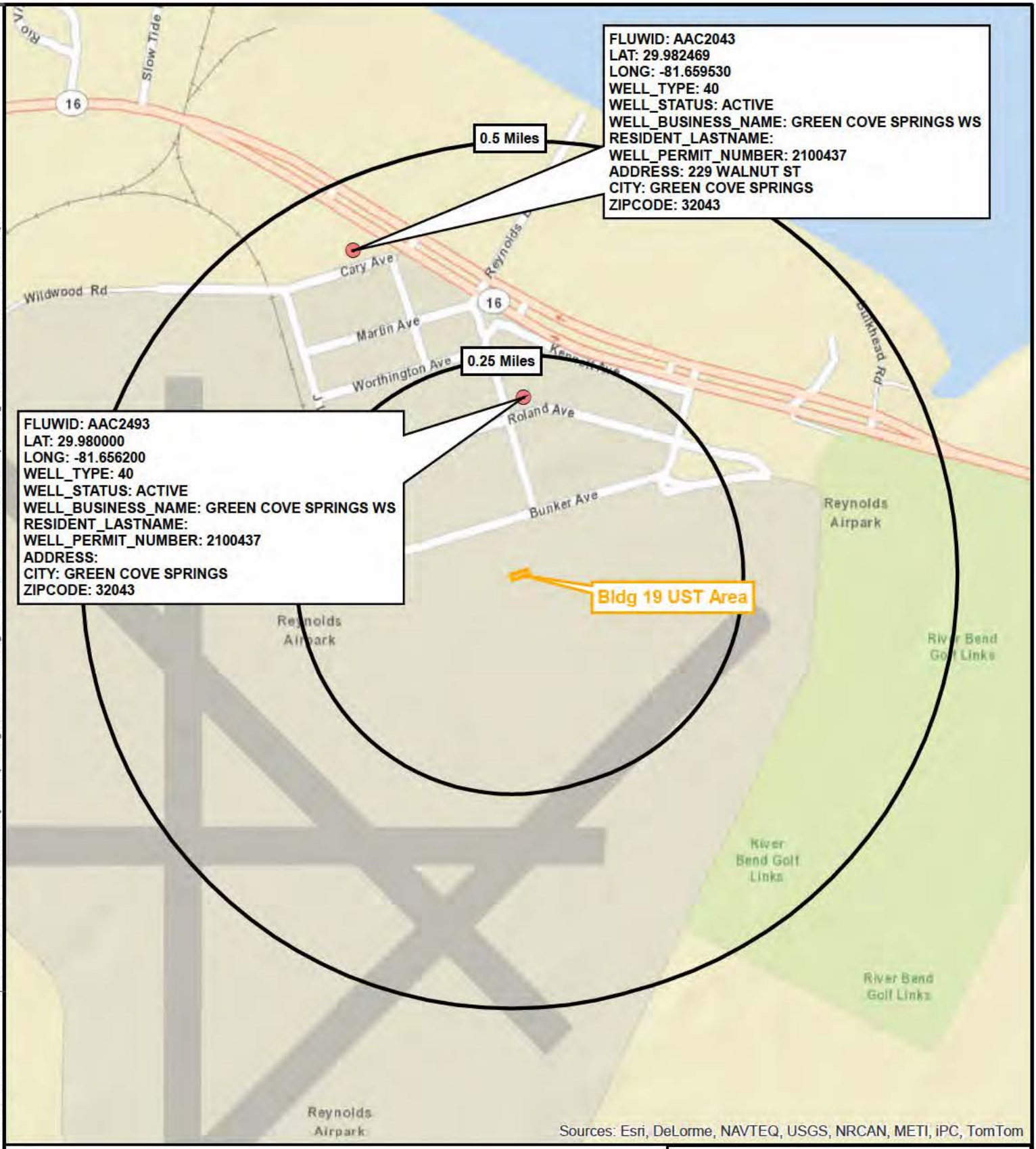
NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 4-3

Groundwater Elevation Contour Map
Building 19 UST Area

Former Lee Field Naval Air Station
Green Cove Springs, FL



G:\Lee Field\GIS Documents\Project Maps\Bldg19 UST Area\Bldg19 UST Area Site Assessment Report\Bldg19UST Potable Well Location Map.mxd | Reviewer: S. Smith | Author: marla.hall | 3/7/2018

Legend

- Potable Water Well
- Site Boundary

1 inch = 800 feet

0 400 800 1,600 Feet

NAD 1983 State Plane Florida East Feet

APTIM

FIGURE 4-4

Potable Well Location Map
Building 19 UST Area

Former Lee Field Naval Air Station
Green Cove Springs, FL

APPENDIX A

HISTORICAL SOIL AND GROUNDWATER ANALYTICAL RESULTS

(PROVIDED ELECTRONICALLY)

APPENDIX B

FIELD INSTRUMENT CALIBRATION RECORDS

CB&I PID/FID DETECTOR CALIBRATION LOG

Project Name: LFNAS II **Project Location:** Green Cove Spgs, FL **Project Number:** 500108

Calibrated By: A. Cinelli **Instrument Model/Serial Number:** MiniRAE3000/106433

Date / Time	Equipment Type	Battery Charged (y/n)	Calibration Standard	Calibration Standard Concentration (ppm)	Span Setting	Meter Scale Setting	Zeroed (y/n)	Expected Meter Reading (ppm)	Actual Meter Reading (ppm)
8/2 0800	PID	Y	ISO	100	100	Low	N	100	100.2
8/3 0730	PID	Y	ISO	100	100	low	N	100	100.3
8/4 0700	PID	Y	ISO	100	100	Low	N	100	100.2
8/5 0700	PID	Y	ISO	100	100	Low	No	100	100.2
8/6 0645	PID	Y	ISO	100	100	Low	N	100	100.2
8/7 0650	PID	Y	ISO	100	100	Low	N	100	100.2
8/8 0650	PID	Y	ISO	100	100	Low	N	100	100.3
8/9 0645	PID	Y	ISO	100	100	Low	N	100	100.3
8/14/0930	PID	Y	ISO	100	100	Low	N	100	100.2
8/15/0645	PID	Y	ISO	100	100	Low	N	100	100.2
8/17/0700	PID	Y	ISO	100	100	Low	N	100	100.3
8/18/0700	PID	Y	ISO	100	100	Low	N	100	100.3

NOTE: This list shall be completed for all calibration performed. Only equipment requiring periodic calibration will be included.

YSI MULTI-PARAMETER FIELD CALIBRATION WORKSHEET

Project Name: Former NAS Lee Field

Date: 8/12/2016

Sample Tech.: A. Crnell

Model: YSI 6820

Calibration Type (circle):
Initial Calibration / Initial Calibration Verification / Continued Calibration Verification

Meter #:

Sonde #:

CBI SN: 106410

Operation Notes:

1) Allow for at least 10 minutes for warmup and DO saturation prior to use.
2) Did the DO membrane require replacement? NO
3) Is turbidity wiper operational? NA
4) DO Sensor Check.

Complete the DO sensor check with the 6000 series unit cold, turned on for the first time of the day.
Go to the RUN mode and watch the DO% output for about a 2 minute period. The unit
should display decreasing values to a stabilization reading at or near ~ 100%, or lower with higher attitude.
In the event that the DO% starts low and climbs to a stabilization value indicates that the sensor requires maintainance.
DO Sensor Operational ? Yes

Parameter	Readings / Time: Initial prior to calibration	Directly After Calibration	Calibration Acceptance Calculation	Accept (y/n)	Final after sampling	Accept Final Check (y/n)	Units	Acceptance Criteria
Barometric pressure	@						mmHg	Daily independent barometric pressure check. +/- 2.5 mmHg
Temperature	@	@			@		C	+/- 0.5 °C of NIST thermometer traceable value.
Dissolved Oxygen	98.7 @	10.02 @		Y	99.8 @	Y	mg/L	+/- 0.3 mg/L of ttheoretical value on Table FT1500-1 (see below)
Conductivity (10)	10.4 @	10.0 @		Y	10.0 @	Y	mS/cm	+/- 5.0 % of calibration standard
pH 4	4.1 @	4.0 @		Y	4.01 @	Y	SU	+/- 0.2 pH of calibration standard
pH 7*	7.3 @	7.0 @		Y	7.03 @	Y	SU	
pH 10	9.8 @	10.0 @		Y	10.00 @	Y	SU	
ORP	@	@			@		mV	+/- 10 mV of standard
Turbidity (0)	0 @	0 @		Y	0 @	Y	NTU	0.1–10 NTU: +/- 10% of calibraion standard 11-40 NTU: +/- 8% of calibraion standard 41-100 NTU: +/- 6.5% of calibraion standard >100 NTU: +/- 5% of calibraion standard
Turbidity (100 NTU)	100 @	100 @		Y	100 @	Y	NTU	

Hach 2100

*-first standard of calibration procedure

Table 1500-1: Solubility of Oxygen in Water at Atmoshperic Pressure

Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO
0	14.621	11	11.027	22	8.743	33	7.183	44	6.021
1	14.216	12	10.777	23	8.578	34	7.065	45	5.927
2	13.829	13	10.537	24	8.418	35	9.65	46	8.835
3	13.46	14	10.306	25	8.263	36	6.837	47	5.744
4	13.107	15	10.084	26	8.113	37	6.727	48	5.654
5	12.77	16	9.87	27	7.968	38	6.62	49	5.565
6	12.447	17	9.665	28	7.827	39	6.515	50	5.477
7	12.139	18	9.467	29	7.691	40	6.412		
8	11.843	19	9.276	30	7.559	41	6.312		
9	11.559	20	9.092	31	7.43	42	6.213		
10	11.288	21	8.915	32	7.305	43	6.116		

YSI MULTI-PARAMETER FIELD CALIBRATION WORKSHEET

Project Name: Former NAS Lee Field
Date: 8/23/2016
Sample Tech.: A. Cinelli
Model: YSI 6820
Meter #:
Sonde #:
CBI SN: 106410

Calibration Type (circle).:
Initial Calibration / Initial Calibration Verification / Continued Calibration Verification

Operation Notes:
1) Allow for at least 10 minutes for warmup and DO saturation prior to use.
2) Did the DO membrane require replacement? NO
3) Is turbidity wiper operational? N/A
4) DO Sensor Check.
Complete the DO sensor check with the 6000 series unit cold, turned on for the first time of the day.
Go to the RUN mode and watch the DO% output for about a 2 minute period. The unit
should display decreasing values to a stabilization reading at or near ~ 100%, or lower with higher attitude.
In the event that the DO% starts low and climbs to a stabilization value indicates that the sensor requires maintainance.
DO Sensor Operational ? Yes

Parameter	Readings / Time: Initial prior to calibration	Directly After Calibration	Calibration Acceptance Calculation	Accept (y/n)	Final after sampling	Accept Final Check (y/n)	Units	Acceptance Criteria
Barometric pressure	@						mmHg	Daily independent barometric pressure check. +/- 2.5 mmHg
Temperature	@	@			@		C	+/- 0.5 °C of NIST thermometer traceable value.
Dissolved Oxygen	98.3 @	100.0 @		Y	98.7 @	Y	% mg/L	+/- 0.3 mg/L of ttheoretical value on Table FT1500-1 (see below)
Conductivity (10)	10.4 @	10.0 @		Y	10.03 @	Y	mS/cm	+/- 5.0 % of calibration standard
pH 4	4.1 @	4.0 @		Y	4.01 @	Y	SU	+/- 0.2 pH of calibration standard
pH 7*	7.1 @	7.0 @		Y	7.0 @	Y	SU	
pH 10	10.2 @	10.0 @		Y	10.01 @	Y	SU	
ORP	@	@			@		mV	+/- 10 mV of standard
Turbidity (0)	0 @	0 @		Y	0 @	Y	NTU	0.1--10 NTU: +/- 10% of calibraion standard 11-40 NTU: +/- 8% of calibraion standard 41-100 NTU: +/- 6.5% of calibraion standard >100 NTU: +/- 5% of calibraion standard
Turbidity (100 NTU)	100 @	100 @		Y	100 @	Y	NTU	

Hach 2100 C

*-first standard of calibration procedure

Table 1500-1: Solubility of Oxygen in Water at Atmoshperic Pressure

Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO
0	14.621	11	11.027	22	8.743	33	7.183	44	6.021
1	14.216	12	10.777	23	8.578	34	7.065	45	5.927
2	13.829	13	10.537	24	8.418	35	9.65	46	8.835
3	13.46	14	10.306	25	8.263	36	6.837	47	5.744
4	13.107	15	10.084	26	8.113	37	6.727	48	5.654
5	12.77	16	9.87	27	7.968	38	6.62	49	5.565
6	12.447	17	9.665	28	7.827	39	6.515	50	5.477
7	12.139	18	9.467	29	7.691	40	6.412		
8	11.843	19	9.276	30	7.559	41	6.312		
9	11.559	20	9.092	31	7.43	42	6.213		
10	11.288	21	8.915	32	7.305	43	6.116		

YSI MULTI-PARAMETER FIELD CALIBRATION WORKSHEET

Project Name: Former NAS Lee Field

Date: 9/14/2016

Sample Tech.: A. Cinel

Model: YSI 6820

Calibration Type (circle).:
Initial Calibration / Initial Calibration Verification / Continued Calibration Verification

Meter #:

Sonde #:

CBI SN: 106410

Operation Notes:
1) Allow for at least 10 minutes for warmup and DO saturation prior to use.
2) Did the DO membrane require replacement? NO
3) Is turbidity wiper operational? NA
4) DO Sensor Check.
Complete the DO sensor check with the 6000 series unit cold, turned on for the first time of the day.
Go to the RUN mode and watch the DO% output for about a 2 minute period. The unit
should display decreasing values to a stabilization reading at or near ~ 100%, or lower with higher attitude.
In the event that the DO% starts low and climbs to a stabilization value indicates that the sensor requires maintainance.
DO Sensor Operational ? Yes

Parameter	Readings / Time: Initial prior to calibration	Directly After Calibration	Calibration Acceptance Calculation	Accept (y/n)	Final after sampling	Accept Final Check (y/n)	Units	Acceptance Criteria
Barometric pressure	@						mmHg	Daily independent barometric pressure check. +/- 2.5 mmHg
Temperature	@	@			@		C	+/- 0.5 °C of NIST thermometer traceable value.
Dissolved Oxygen	97.7 @	100 @		Y	99.8 @	Y	% mg/L	+/- 0.3 mg/L of ttheoretical value on Table FT1500-1 (see below)
Conductivity (10)	10.0 @	10.0 @		Y	10.0 @	Y	mS/cm	+/- 5.0 % of calibration standard
pH 4	3.99 @	4.0 @		Y	4.01 @	Y	SU	+/- 0.2 pH of calibration standard
pH 7*	6.98 @	7.0 @		Y	7.0 @	Y	SU	
pH 10	9.98 @	10.0 @		Y	10.01 @	Y	SU	
ORP	@	@			@		mV	+/- 10 mV of standard
Turbidity (0)	0 @	0 @		Y	0 @	Y	NTU	0.1-10 NTU: +/- 10% of calibraion standard 11-40 NTU: +/- 8% of calibraion standard 41-100 NTU: +/- 6.5% of calibraion standard >100 NTU: +/- 5% of calibraion standard
Turbidity (100 NTU)	100 @	100 @		Y	100 @	Y	NTU	

HACH 2100 <

*-first standard of calibration procedure

Table 1500-1: Solubility of Oxygen in Water at Atmoshperic Pressure

Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO
0	14.621	11	11.027	22	8.743	33	7.183	44	6.021
1	14.216	12	10.777	23	8.578	34	7.065	45	5.927
2	13.829	13	10.537	24	8.418	35	9.65	46	8.835
3	13.46	14	10.306	25	8.263	36	6.837	47	5.744
4	13.107	15	10.084	26	8.113	37	6.727	48	5.654
5	12.77	16	9.87	27	7.968	38	6.62	49	5.565
6	12.447	17	9.665	28	7.827	39	6.515	50	5.477
7	12.139	18	9.467	29	7.691	40	6.412		
8	11.843	19	9.276	30	7.559	41	6.312		
9	11.559	20	9.092	31	7.43	42	6.213		
10	11.288	21	8.915	32	7.305	43	6.116		

YSI MULTI-PARAMETER FIELD CALIBRATION WORKSHEET

Project Name: Former NAS Lee Field

Date: 9/15/2016

Sample Tech.: A. Cinelli

Model: YSI 6820

Calibration Type (circle).:
Initial Calibration / Initial Calibration Verification / Continued Calibration Verification

Meter #:

Sonde #:

CBI SN: 10641O

Operation Notes:
1) Allow for at least 10 minutes for warmup and DO saturation prior to use.
2) Did the DO membrane require replacement? NO
3) Is turbidity wiper operational? NA
4) DO Sensor Check.
Complete the DO sensor check with the 6000 series unit cold, turned on for the first time of the day.
Go to the RUN mode and watch the DO% output for about a 2 minute period. The unit
should display decreasing values to a stabilization reading at or near ~ 100%, or lower with higher attitude.
In the event that the DO% starts low and climbs to a stabilization value indicates that the sensor requires maintainance.
DO Sensor Operational ? Yes

Parameter	Readings / Time: Initial prior to calibration	Directly After Calibration	Calibration Acceptance Calculation	Accept (y/n)	Final after sampling	Accept Final Check (y/n)	Units	Acceptance Criteria
Barometric pressure	@						mmHg	Daily independent barometric pressure check. +/- 2.5 mmHg
Temperature	@	@			@		C	+/- 0.5 °C of NIST thermometer traceable value.
Dissolved Oxygen	98.7 @	100% @		Y	99.95 @	Y	% mg/L	+/- 0.3 mg/L of ttheoretical value on Table FT1500-1 (see below)
Conductivity (10)	10.0 @	10.0 @		Y	10.0 @	Y	mS/cm	+/- 5.0 % of calibration standard
pH 4	4.0 @	4.0 @		Y	4.0 @	Y	SU	+/- 0.2 pH of calibration standard
pH 7*	7.0 @	7.0 @		Y	7.0 @	Y	SU	
pH 10	10.0 @	10.0 @		Y	10.0 @	Y	SU	
ORP	@	@			@		mV	+/- 10 mV of standard
Turbidity (0)	0 @	0 @		Y	0 @	Y	NTU	0.1–10 NTU: +/- 10% of calibraion standard 11-40 NTU: +/- 8% of calibraion standard 41-100 NTU: +/- 6.5% of calibraion standard >100 NTU: +/- 5% of calibraion standard
Turbidity (100 NTU)	100 @	100 @		Y	100 @	Y	NTU	

Hach 2100 C

*-first standard of calibration procedure

Table 1500-1: Solubility of Oxygen in Water at Atmoshperic Pressure

Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO
0	14.621	11	11.027	22	8.743	33	7.183	44	6.021
1	14.216	12	10.777	23	8.578	34	7.065	45	5.927
2	13.829	13	10.537	24	8.418	35	9.65	46	8.835
3	13.46	14	10.306	25	8.263	36	6.837	47	5.744
4	13.107	15	10.084	26	8.113	37	6.727	48	5.654
5	12.77	16	9.87	27	7.968	38	6.62	49	5.565
6	12.447	17	9.665	28	7.827	39	6.515	50	5.477
7	12.139	18	9.467	29	7.691	40	6.412		
8	11.843	19	9.276	30	7.559	41	6.312		
9	11.559	20	9.092	31	7.43	42	6.213		
10	11.288	21	8.915	32	7.305	43	6.116		

YSI MULTI-PARAMETER FIELD CALIBRATION WORKSHEET

Project Name: LEE FIELD

Sample Tech.: J WASHINGTON

Date: 12-28-18

Model: ~~YSI 6820~~

Meter #:

Sonde #:

~~Bottom~~ ~~GBI~~ SN: 106410

Calibration Type (circle).:
Initial Calibration / Initial Calibration Verification / Continued Calibration Verification

Operation Notes:

1) Allow for at least 10 minutes for warmup and DO saturation prior to use.
2) Did the DO membrane require replacement? N
3) Is turbidity wiper operational? NA
4) DO Sensor Check.

Complete the DO sensor check with the 6000 series unit cold, turned on for the first time of the day.
Go to the RUN mode and watch the DO% output for about a 2 minute period. The unit
should display decreasing values to a stabilization reading at or near ~ 100%, or lower with higher attitude.
In the event that the DO% starts low and climbs to a stabilization value indicates that the sensor requires maintainance.
DO Sensor Operational ? Y

Parameter	Readings / Time: Initial prior to calibration	Directly After Calibration	Calibration Acceptance Calculation	Accept (y/n)	Final after sampling	Final Calibration Acceptance Calculation	Accept Final Check (y/n)	Units	Acceptance Criteria
Barometric pressure	749.1 @							mmHg	Daily independent barometric pressure check. +/- 2.5 mmHg
Temperature	@	@	MA-SA=+/-D		@	MA-SA=+/-D		C	+/- 0.5 °C of NIST thermometer traceable value.
Dissolved Oxygen	98.1 @	100.0 @	MA-SA=+/-D	Y	95.3 @	MA-SA=+/-D	Y	mg/L	+/- 0.3 mg/L of ttheoretical value on Table FT1500-1 (see below)
Conductivity	9.60 @	10.0 @	(MA/SA)*100=%D	Y	10.12 @	(MA/SA)*100=%D	Y	mS/cm	+/- 5.0 % of calibration standard
pH 4	3.95 @	4.0 @	MA-SA=+/-D	Y	3.80 @	MA-SA=+/-D	Y	SU	+/- 0.2 pH of calibration standard
pH 7*	6.97 @	7.0 @	MA-SA=+/-D	Y	7.0 @	MA-SA=+/-D	Y	SU	
pH 10	@	@	MA-SA=+/-D		@	MA-SA=+/-D		SU	
ORP	199.7 @	245.3 @	MA-SA=+/-D	Y	213.3 @	MA-SA=+/-D	Y	mV	+/- 10 mV of standard
Turbidity (0)	0.1 @	0.0 @	(MA/SA)*100=%D	Y	0.3 @	(MA/SA)*100=%D	Y	NTU	0.1–10 NTU: +/- 10% of calibraion standard 11-40 NTU: +/- 8% of calibraion standard 41-100 NTU: +/- 6.5% of calibraion standard >100 NTU: +/- 5% of calibraion standard
Turbidity (123 NTU)	117.3 @	123 @	(MA/SA)*100=%D	Y	125.3 @	(MA/SA)*100=%D	Y	NTU	

*-first standard of calibration procedure
%D - percent difference of standard.
+/-D - plus or minus difference of standard.
MA - Measured amount after calibration.
SA - Standard amount.

Table 1500-1: Solubility of Oxygen in Water at Atmoshperic Pressure

Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO	Temp (°C)	DO
0	14.621	11	11.027	22	8.743	33	7.183	44	6.021
1	14.216	12	10.777	23	8.578	34	7.065	45	5.927
2	13.829	13	10.537	24	8.418	35	9.65	46	8.835
3	13.46	14	10.306	25	8.263	36	6.837	47	5.744
4	13.107	15	10.084	26	8.113	37	6.727	48	5.654
5	12.77	16	9.87	27	7.968	38	6.62	49	5.565
6	12.447	17	9.665	28	7.827	39	6.515	50	5.477
7	12.139	18	9.467	29	7.691	40	6.412		
8	11.843	19	9.276	30	7.559	41	6.312		
9	11.559	20	9.092	31	7.43	42	6.213		
10	11.288	21	8.915	32	7.305	43	6.116		

APPENDIX C

SAMPLE COLLECTION LOGS

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-01	SAMPLE ID: XB3001	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 0955	PURGING ENDED AT: 1000	TOTAL VOLUME PURGED (gallons): 0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % satura ion	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1000	0.5	0.5	0.10	N/A	7.12	29.4	620	0.86	68.3	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1035
PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3001	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3001	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3001	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3001	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-02	SAMPLE ID: XB3002	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1050	PURGING ENDED AT: 1055	TOTAL VOLUME PURGED (gallons): 0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % satura ion	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1055	0.5	0.5	0.10	N/A	7.26	27.3	730	1.08	90.0	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1055	SAMPLING ENDED AT: 1130
PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3002	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3002	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3002	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3002	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample. Collected MS/MSD samples XB3002-MS and XB3002-MSD

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: Building 19 UST Area	SITE LOCATION: LFNAS, Green Cove Springs, Florida	
WELL NO: B19HP-03	SAMPLE ID: XB3003	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1025	PURGING ENDED AT: 1030	TOTAL VOLUME PURGED (gallons): 0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1030	0.5	0.5	0.10	N/A	7.35	26.4	550	1.01	10.6	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1030	SAMPLING ENDED AT: 1120
PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3003	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3003	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3003	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3003	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-04	SAMPLE ID: XB3004	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1215	PURGING ENDED AT: 1220	TOTAL VOLUME PURGED (gallons):0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % satura ion	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1220	0.5	0.5	0.10	N/A	7.57	28.2	421	1.31	23.8	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT:1220	SAMPLING ENDED AT: 1255
PUMP OR TUBING DEPTH IN WELL (feet):11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3004	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3004	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3004	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3004	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-05	SAMPLE ID: XB3005	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1240	PURGING ENDED AT: 1245	TOTAL VOLUME PURGED (gallons):0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1245	0.5	0.5	0.10	N/A	7.60	28.2	510	1.79	40.4	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT:1245	SAMPLING ENDED AT: 1320
PUMP OR TUBING DEPTH IN WELL (feet):11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3005	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3005	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3005	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3005	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample. Collected duplicate sample XB3018

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-06	SAMPLE ID: XB3006	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1325	PURGING ENDED AT: 1330	TOTAL VOLUME PURGED (gallons): 0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % satura ion	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1330	0.5	0.5	0.10	N/A	7.33	28.8	520	0.74	300	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3006	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3006	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3006	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3006	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-07	SAMPLE ID: XB3007	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1340	PURGING ENDED AT: 1345	TOTAL VOLUME PURGED (gallons): 0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % satura ion	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1345	0.5	0.5	0.10	N/A	7.18	27.7	690	1.48	79.3	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1345	SAMPLING ENDED AT: 1415
PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3007	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3007	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3007	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3007	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: B19HP-08	SAMPLE ID: XB3008	DATE: 12 AUG 2016

PURGING DATA

WELL DIAMETER (inches): 2.125	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 10 feet to 12 feet	STATIC DEPTH TO WATER (feet): NA	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0 gallons + (0.0026 gallons/foot X 16 feet) + 0.26 gallons = 0.3016 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11	PURGING INITIATED AT: 1400	PURGING ENDED AT: 1405	TOTAL VOLUME PURGED (gallons): 0.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % satura ion	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1405	0.5	0.5	0.10	N/A	7.32	28.6	550	1.28	73.4	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1405	SAMPLING ENDED AT: 1440
PUMP OR TUBING DEPTH IN WELL (feet): 11	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE D CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3008	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3008	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3008	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3008	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: Screening level groundwater sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polye hylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW01	SAMPLE ID: XB3009	DATE: 15 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 2.55	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 = (12 feet – 2.55 feet) X 0.16 gallons/foot = 1 51 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.3	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.3	PURGING INITIATED AT: 1250	PURGING ENDED AT: 1320	TOTAL VOLUME PURGED (gallons): 2.65

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1310	1.75	1.75	0.09	3.40	6.55	28.9	610	0.16	1.25	None	None
1315	0.45	2.20	0.09	3.40	6.56	28.9	610	0.16	1.00	None	None
1320	0.45	2.65	0.09	3.40	6.56	28.9	610	0.17	1.00	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1325	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet): 7.3	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3009	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3009	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3009	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3009	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last. Collected field duplicate sample XB3010 and field split sample XB3017.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

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Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW02	SAMPLE ID: XB3011	DATE: 15 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 2.15	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 = (12 feet – 2.15 feet) X 0.16 gallons/foot = 1 58 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.1	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.1	PURGING INITIATED AT: 1115	PURGING ENDED AT: 1150	TOTAL VOLUME PURGED (gallons): 2.10

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1140	1.5	1.5	0.06	6.60	6.67	28.5	440	0.30	8.5	None	None
1145	0.3	1.8	0.06	6.60	6.66	28.7	441	0.62	5.3	None	None
1150	0.3	2.1	0.06	6.60	6.65	28.5	440	0.73	4.0	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1325	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet): 7.1	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3011	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3011	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3011	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3011	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last. Collected MS/MSD sample.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW03	SAMPLE ID: XB3012	DATE: 14 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 3.10	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 = (12 feet – 3.10 feet) X 0.16 gallons/foot = 1.42 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	PURGING INITIATED AT: 1435	PURGING ENDED AT: 1505	TOTAL VOLUME PURGED (gallons): 3.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1450	1.5	1.5	0.1	7.1	6.35	32.1	430	0.35	15	None	None
1455	0.5	2.0	0.1	7.1	6.37	32.2	470	0.61	9.3	None	None
1500	0.5	2.5	0.1	7.1	6.48	32.2	490	0.61	4.7	None	None
1505	0.5	3.0	0.1	7.1	6.48	32.2	480	0.62	4.0	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1505	SAMPLING ENDED AT: 1610
PUMP OR TUBING DEPTH IN WELL (feet): 7.5	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3012	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3012	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3012	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3012	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW04	SAMPLE ID: XB3013	DATE: 14 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 3.30	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 = (12 feet – 3.30 feet) X 0.16 gallons/foot = 1 39 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.6	PURGING INITIATED AT: 1525	PURGING ENDED AT: 1547	TOTAL VOLUME PURGED (gallons): 2.70

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1537	1.50	1.5	0.12	7.20	6.61	30.9	363	2.05	8.6	None	None
1542	0.60	2.10	0.12	7.20	6.58	30.7	368	2.00	7.5	None	None
1547	0.60	2.70	0.12	7.20	6.58	30.6	368	1.99	4.0	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1550	SAMPLING ENDED AT: 1630
PUMP OR TUBING DEPTH IN WELL (feet): 7.6	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3013	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3013	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3013	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3013	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW05	SAMPLE ID: XB3014	DATE: 15 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 3.15	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 = (12 feet – 3.15 feet) X 0.04 gallons/foot = 0 35 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.6	PURGING INITIATED AT: 1015	PURGING ENDED AT: 1045	TOTAL VOLUME PURGED (gallons): 1.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1035	1.00	1.00	0.05	5.3	6.99	31.5	409	0.31	6.8	None	None
1040	0.25	1.25	0.05	5.3	6.98	31.6	410	0.25	4.7	None	None
1045	0.25	1.50	0.05	5.3	6.96	31.6	415	0.20	3.0	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT:1125
PUMP OR TUBING DEPTH IN WELL (feet): 7.6	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3014	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3014	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3014	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3014	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW06	SAMPLE ID: XB3015	DATE: 14 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 1.90	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 = (12 feet – 1.90 feet) X 0.04 gallons/foot = 0.40 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.0	PURGING INITIATED AT: 1400	PURGING ENDED AT: 1420	TOTAL VOLUME PURGED (gallons): 2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1410	1.0	1.0	0.10	4.85	6.43	29.2	670	0.27	10.0	None	None
1415	0.5	1.5	0.10	4.85	6.57	29.1	640	0.21	9.08	None	None
1420	0.5	2.0	0.10	4.85	6.57	29.1	630	0.18	6.50	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1425	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet): 7.00	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3015	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3015	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3015	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3015	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: BUILDING 19 UNDERGROUND STORAGE TANK AREA	SITE LOCATION: FORMER LEE FIELD NAVAL AIR STATION, GREEN COVE SPRINGS, FL	
WELL NO: BLDG19-MW07	SAMPLE ID: XB3016	DATE: 15 SEP 2016

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): ¼	WELL SCREEN INTERVAL DEPTH: 30 feet to 35 feet	STATIC DEPTH TO WATER (feet): 4.39	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

1 = 0 gallons + (0.0026 gallons/foot X 35 feet) + 0.25 gallons = 0.34 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32.5	PURGING INITIATED AT: 0930	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (gallons): 1.6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0945	1.0	1.0	0.06	7.55	6.55	25.2	770	0.80	7.7	None	None
0950	0.3	1.3	0.06	7.55	6.52	25.1	770	0.32	5.0	None	None
0955	0.3	1.6	0.06	7.55	6.52	25.1	770	0.25	3.6	None	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: CINELLI, ANTHONY – (CBI)	SAMPLER(S) SIGNATURE(S): A C Cinelli	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1035
PUMP OR TUBING DEPTH IN WELL (feet): 32.5	TUBING MATERIAL CODE: O - Teflon®-lined	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
XB3016	2	AG	1-L	NA	NA	NA	SVOCs – 8270C	AP	200 mL/m
XB3016	2	AG	1-L	NA	NA	NA	PAHs – 8270C LL	AP	200 mL/m
XB3016	2	AG	1-L	H_2SO_4	Lab Preserved	<2	TRPH – FL PRO	AP	200 mL/m
XB3016	3	O - VOA	40-ml	HCL	Lab Preserved	<2	VOCs – 8260B	AP	80 mL/m

REMARKS: VOA – Clear Glass with Septum. Samples for VOC analysis collected last.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = O her (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

BORING LOG

Boring/Well ID: B19SO-01
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/17/2016
Ended: 8/17/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052144.79
Easting: 448316.85

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
0820	XB0001	0					SM	As above with increasing clay content.	Field Duplicate XB0003
0835	XB0002	0					SM	As above with increasing moisture content.	
0845	XB0004	0						**Boring was terminated at approximately 4 feet bgs.**	

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10
15
20

BORING LOG

Boring/Well ID: B19SO-02
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/17/2016
Ended: 8/17/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052159.5
Easting: 448351.25

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
1420	XB0005	0					SM	As above with increasing clay content.	
1430	XB0006	0					SM	As above with increasing moisture content.	
1530	XB0007	0						**Boring was terminated at approximately 4 feet bgs.**	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-03
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052169.7
Easting: 448384.31

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
0815	XB0008	0					SM	As above with increasing clay content.	
0820	XB0009	0					SM	As above with increasing moisture content.	
0830	XB0010	0						**Boring was terminated at approximately 4 feet bgs.**	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-04
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052178.65
Easting: 448411.16

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
0845	XB0011	0					SM	As above with increasing clay content.	
0855	XB0012	0					SM	As above with increasing moisture content.	
0910	XB0013	0						**Boring was terminated at approximately 4 feet bgs.**	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-05
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/17/2016
Ended: 8/17/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052159.81
Easting: 448414.69

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	Field Duplicate XB0015
0945	XB0014	0 5					SM	As above with increasing clay content.	
1000	XB0016	0					SM	As above with increasing moisture content.	
0915	XB0017	0							
								Boring was terminated at approximately 4 feet bgs.	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-06
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052149.92
Easting: 448417.52

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
0920	XB0018	0					SM	As above with increasing clay content.	
0930	XB0019	0					SM	As above with increasing moisture content.	
0940	XB0020	0						**Boring was terminated at approximately 4 feet bgs.**	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-07
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/17/2016
Ended: 8/17/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052148.98
Easting: 448382.43

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
1310	XB0021	0 7					SM	As above with increasing clay content.	
1325	XB0022	0					SM	As above with increasing moisture content.	Collected MS/MSD Sample
1350	XB0023	0						**Boring was terminated at approximately 4 feet bgs.**	

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BORING LOG

Boring/Well ID: B19SO-08
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052138.61
Easting: 448379.84

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
0955	XB0024	0					SM	As above with increasing clay content.	
1005	XB0025	0 9					SM	As above with increasing moisture content.	
1015	XB0026	0							
								Boring was terminated at approximately 4 feet bgs.	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-09
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052164.92
Easting: 448363.39

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
1015	XB0027	0					SM	As above with increasing clay content.	
1030	XB0028	0					SM	As above with increasing moisture content.	
1045	XB0029	0						**Boring was terminated at approximately 4 feet bgs.**	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-10
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052163.58
Easting: 448366.18

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
1115	XB0030	0					SM	As above with increasing clay content.	Field Duplicate XB0032
1120	XB0031	0					SM	As above with increasing moisture content.	
1140	XB0033	0						**Boring was terminated at approximately 4 feet bgs.**	
				5					
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-11
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/18/2016
Ended: 8/18/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052176.17
Easting: 448401.58

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
1215	XB0034	0					SM	As above with increasing clay content.	
1225	XB0035	0					SM	As above with increasing moisture content.	
1235	XB0036	0							
				5				**Boring was terminated at approximately 4 feet bgs.**	
				10					
				15					
				20					

BORING LOG

Boring/Well ID: B19SO-12
Sheet: 1 **of** 1

Project No.: 500108
Client: USACE
Site Name: Building 19 UST Area
Started: 8/17/2016
Ended: 8/17/2016

Drilling Co.: CB&I Federal Services
Drill Rig Model: Not Applicable
Driller: A. Cinelli
Drlling Method: Hand Auger
Hole Diameter: 2 **(inches)**

Logged By: A. Cinelli
Edited By: S. Smith
Checked By: Z. Parham

Northing: 2052173.23
Easting: 448396.09

▽ First Water: ft bgs on at hrs
▼ Static Water: ft bgs on at hrs

TIME	SAMPLE NUMBER	PID (ppm)	SAMPLE	DEPTH (feet)	ELEVATION (not applicable)	GRAPHIC LOG	SOIL/ROCK SYMBOL	SOIL / ROCK DESCRIPTION	COMMENTS OR NOTES
							SM	Sand, silty, fine grained, light to medium gray, nonplastic, moist.	
1030	XB0037	0					SM	As above with increasing clay content.	Field Duplicate XB0039
1040	XB0038	0					SM	As above with increasing moisture content.	
1110	XB0040	0							
								Boring was terminated at approximately 4 feet bgs.	
				5					
				10					
				15					
				20					

APPENDIX D

WELL CONSTRUCTION AND DEVELOPMENT LOGS

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
BLDG19-MW05	FORMER LFNAS BUILDING 19 UST AREA	9300836	23 AUG 2016

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [ ] Above Grade (AG)
- [x] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [x] Shallow (Water-Table) Monitoring
- [ ] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
12	12	3.25	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.0 in. Sch. 40 PVC	[x] Flush- [ ] Other	1.86 feet from -0.14 feet to 2 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.0 in. Sch. 40 PVC	0.010 in.	10 feet from 2 feet to 12 feet

1st Surface Casing Material: N/A; also check: [ ] Permanent [ ] Temporary	1st Surface Casing I.D. (inches): N/A	1st Surface Casing Length: 0 feet; from 0 feet to 0 feet
2nd Surface Casing Material: N/A; also check: [ ] Permanent [ ] Temporary	2nd Surface Casing I.D. (inches): N/A	2nd Surface Casing Length: 0 feet; from 0 feet to 0 feet
3rd Surface Casing Material: N/A; also check: [ ] Permanent [ ] Temporary	3rd Surface Casing I.D. (inches): N/A	3rd Surface Casing Length: 0 feet; from 0 feet to 0 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Mesh Silica Sand	[x] Yes [ ] No	10.5 feet from 1.5 feet to 12 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Mesh Silica Sand	0.5 feet from 1 feet to 1.5 feet

Surface Seal Material:	Surface Seal Length:
Cement-Bentonite Grout	0.5 feet from -0.5 feet to 1 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
24 AUG 2016	[x] Surge/Pump [ ] Pump [ ] Compressed Air [ ] Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [x] Peristaltic [ ] Submersible [ ] Other (describe)	3.18

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.5	0.30	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	22.5	45	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Cloudy	Clear

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Project Number: 500108

Form Completed by: Anthony Cinelli (CB&I)

Monitoring Well Volume Calculations

Volume of Water in Casing: Gallons/foot = 0.041 x d^2, where casing diameter in inches = (**0.041** x (**1**)^2) = **0.041** gal/ft.

Well Volume (gallons) = Water Column (ft) x Gal/ft = **8.82** ft x **0.041** gal/ft = **0.36** gallons

Volume of Water in Filter Pack:

Gallons/foot = 0.041 x (D^2 - d^2), where D is total borehole diameter in inches & d is casing diameter in inches = **0.041** x ((**2.5**)^2 - (**1**)^2) = **0.22** gal/ft.

Filter Pack Volume (gal) = (the less of the filter pack length or water column) x gal/ft x porosity (0.3) = (**8.82**)ft x (**0.22**) gal/ft x **0.3** = **0.57** gal

Purge Well Volume: Purge well Volume = Filter pack volume + Well Volume = **0.57** gal + **0.36** gal = **0.93** gal.

1 x Purge Well Volume	2 x Purge Well Volume	3 x Purge Well Volume	4 x Purge Well Volume	5 x Purge Well Volume
0.93	**1.86**	**2.79**	**3.72**	**4.65**

Development Record

Time (24 hrs)	Volume Removed (gal)	Water Level (ft) (TOC)	Turbidity (NTU)	Clarity (color)	Temp (C)	pH (Std Units)	Conductivity (µS/cm)	D O (mg/L)	Redox (mV)	Comments
0930	0	3.18	71000	BROWN	31.6	7.01	416	0.39	30.4	ORGANIC ODOR
0935	1.1	3.43	246	AMBER	31.5	6.99	412	0.31	29.5	ORGANIC ODOR
0945	3.3	3.51	25.1	AMBER	31.5	6.98	410	0.28	28.7	ORGANIC ODOR
1000	6.5	3.48	10.8	AMBER	31.4	6.98	408	0.19	28.0	ORGANIC ODOR

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
BLDG19-MW06	FORMER LFNAS BUILDING 19 UST AREA	9300836	23 AUG 2016

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [ ] Above Grade (AG)
- [x] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [x] Shallow (Water-Table) Monitoring
- [ ] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
12	12	3.25	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.0 in. Sch. 40 PVC	[x] Flush- [ ] Other	1.7 feet from -0.3 feet to 2 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.0 in. Sch. 40 PVC	0.010 in.	10 feet from 2 feet to 12 feet

1st Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	1st Surface Casing I.D. (inches): N/A	1st Surface Casing Length: 0 feet from 0 feet to 0 feet
2nd Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	2nd Surface Casing I.D. (inches): N/A	2nd Surface Casing Length: 0 feet from 0 feet to 0 feet
3rd Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	3rd Surface Casing I.D. (inches): N/A	3rd Surface Casing Length: 0 feet from 0 feet to 0 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Mesh Sand	[x] Yes [ ] No	10.5 feet from 1.5 feet to 12 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Mesh Silica Sand	0.5 feet from 1 feet to 1.5 feet

Surface Seal Material:	Surface Seal Length:
Cement-Bentonite Grout	0.5 feet from -0.5 feet to 1 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
24 AUG 2016	[x] Surge/Pump [ ] Pump [ ] Compressed Air [ ] Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [x] Peristaltic [ ] Submersible [ ] Other (describe)	3.16

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.5	0.36	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	22.5	45	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Cloudy	Clear

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Project Number: 500108

Form Completed by: Anthony Cinelli (CB&I)

Monitoring Well Volume Calculations

Volume of Water in Casing: Gallons/foot = 0.041 x d^2, where casing diameter in inches = (0.041 x (1)^2) = **0.041** gal/ft.

Well Volume (gallons) = Water Column (ft) x Gal/ft = **8.84** ft x **0.041** gal/ft = **0.36** gallons

Volume of Water in Filter Pack:

Gallons/foot = 0.041 x (D^2 - d^2), where D is total borehole diameter in inches & d is casing diameter in inches =**0.041** x ((**2.5**)^2- (**1**)^2) = **0.22** gal/ft.

Filter Pack Volume (gal) = (the less of the filter pack lenght or water column) x gal/ft x porosity (0.3) = (**8.84**)ft x (**0.22**) gal/ft x **0.3** = **0.58** gal

Purge Well Volume: Purge well Volume = Filter pack volume + Well Volume = **0.58** gal + **0.36** gal = **0.94** gal.

1 x Purge Well Volume	2 x Purge Well Volume	3 x Purge Well Volume	4 x Purge Well Volume	5 x Purge Well Volume
0.94	**1.88**	**2.82**	**3.76**	**4.7**

Development Record

Time (24 hrs)	Volume Removed (gal)	Water Level (ft) (TOC)	Turbidity (NTU)	Clarity (color)	Temp (C)	pH (Std Units)	Conductivity (µS/cm)	D O (mg/L)	Redox (mV)	Comments
1015	0	3.16	71000	BROWN	31.7	7.03	420	0.37	30.1	ORGANIC ODOR
1020	1.1	3.23	311	AMBER	31.5	7.01	418	0.35	29.9	ORGANIC ODOR
1030	3.3	3.48	30	AMBER	31.4	6.98	415	0.29	29	ORGANIC ODOR
1045	6.5	3.52	17.1	AMBER	31.3	6.99	409	0.20	27.7	ORGANIC ODOR

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
BLDG19-MW07	FORMER LFNAS BUILDING 19 UST AREA	9300836	23 AUG 2016

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [ ] Above Grade (AG)
- [x] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [x] Shallow (Water-Table) Monitoring
- [ ] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3.63	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.0 in. Sch. 40 PVC	[x] Flush- [ ] Other	29.74 feet from -0.26 feet to 30 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.0 in. Sch. 40 PVC	0.010 in.	5 feet from 30 feet to 35 feet

1st Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	1st Surface Casing I.D. (inches): N/A	1st Surface Casing Length: 0 feet from 0 feet to 0 feet
2nd Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	2nd Surface Casing I.D. (inches): N/A	2nd Surface Casing Length: 0 feet from 0 feet to 0 feet
3rd Surface Casing Material: NA also check: [ ] Permanent [ ] Temporary	3rd Surface Casing I.D. (inches): N/A	3rd Surface Casing Length: 0 feet from 0 feet to 0 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Mesh Sand	[x] Yes [ ] No	6 feet from 29 feet to 35 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Mesh Silica Sand (28 ft to 29 ft) 1/4" Hydrated Bentonite Pellets (25 ft to 28 ft)	5 feet from 28 feet to 29 feet

Surface Seal Material:	Surface Seal Length:
Cement-Bentonite Grout	27.5 feet from -0.5 feet to 28 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
24 AUG 2016	[x] Surge/Pump [ ] Pump [ ] Compressed Air [ ] Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [x] Peristaltic [ ] Submersible [ ] Other (describe)	3.19

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.5	0.02	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	22.5	45	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Cloudy	Clear

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Project Number: 500108

Form Completed by: Anthony Cinelli (CB&I)

Monitoring Well Volume Calculations

Volume of Water in Casing: Gallons/foot = 0.041 x d^2, where casing diameter in inches = (**0.041** x (**1**)^2) = **0.041** gal/ft.

Well Volume (gallons) = Water Column (ft) x Gal/ft = **31.81** ft x **0.041** gal/ft = **1.30** gallons

Volume of Water in Filter Pack:

Gallons/foot = 0.041 x (D^2 - d^2), where D is total borehole diameter in inches & d is casing diameter in inches =**0.041** x ((**2.5**)^2- (**1**)^2) = **0.22** gal/ft.

Filter Pack Volume (gal) = (the less of the filter pack length or water column) x gal/ft x porosity (0.3) = (**5**)ft x (**0.22**) gal/ft x **0.3** = **0.33** gal

Purge Well Volume: Purge well Volume = Filter pack volume + Well Volume = **0.33** gal + **1.30** gal = **1.63** gal.

1 x Purge Well Volume	2 x Purge Well Volume	3 x Purge Well Volume	4 x Purge Well Volume	5 x Purge Well Volume
1.63	**3.26**	**4.89**	**6.52**	**8.15**

Development Record

Time (24 hrs)	Volume Removed (gal)	Water Level (ft) (TOC)	Turbidity (NTU)	Clarity (color)	Temp (C)	pH (Std Units)	Conductivity (µS/cm)	D O (mg/L)	Redox (mV)	Comments
1100	0	3.19	71000	BROWN	31.5	7.05	399	0.29	27.7	ORGANIC ODOR
1105	1.1	3.15	468	AMBER	31.3	7.03	396	0.28	27.3	ORGANIC ODOR
1115	3.3	3.17	224	AMBER	31.0	6.99	387	0.27	26.8	ORGANIC ODOR
1130	6.5	3.17	21	AMBER	31.0	6.95	380	0.27	26.6	ORGANIC ODOR
1145	9.5	3.15	12	AMBER	30.8	6.99	378	0.27	26.3	ORGANIC ODOR

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
BLDG19-MW05	FORMER LFNAS BUILDING 19 UST AREA	9300836	23 AUG 2016

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [ ] Above Grade (AG)
- [x] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [x] Shallow (Water-Table) Monitoring
- [ ] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
12	12	3.25	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.0 in. Sch. 40 PVC	[x] Flush- [ ] Other	1.86 feet from -0.14 feet to 2 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.0 in. Sch. 40 PVC	0.010 in.	10 feet from 2 feet to 12 feet

1st Surface Casing Material: N/A; also check: [ ] Permanent [ ] Temporary	1st Surface Casing I.D. (inches): N/A	1st Surface Casing Length: 0 feet; from 0 feet to 0 feet
2nd Surface Casing Material: N/A; also check: [ ] Permanent [ ] Temporary	2nd Surface Casing I.D. (inches): N/A	2nd Surface Casing Length: 0 feet; from 0 feet to 0 feet
3rd Surface Casing Material: N/A; also check: [ ] Permanent [ ] Temporary	3rd Surface Casing I.D. (inches): N/A	3rd Surface Casing Length: 0 feet; from 0 feet to 0 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Mesh Silica Sand	[x] Yes [ ] No	10.5 feet from 1.5 feet to 12 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Mesh Silica Sand	0.5 feet from 1 feet to 1.5 feet

Surface Seal Material:	Surface Seal Length:
Cement-Bentonite Grout	0.5 feet from -0.5 feet to 1 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
24 AUG 2016	[x] Surge/Pump [ ] Pump [ ] Compressed Air [ ] Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [x] Peristaltic [ ] Submersible [ ] Other (describe)	3.18

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.5	0.30	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	22.5	45	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Cloudy	Clear

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Project Number: 500108

Form Completed by: Anthony Cinelli (CB&I)

Monitoring Well Volume Calculations

Volume of Water in Casing: Gallons/foot = 0.041 x d^2, where casing diameter in inches = (**0.041** x (**1**)^2) = **0.041** gal/ft.

Well Volume (gallons) = Water Column (ft) x Gal/ft = **8.82** ft x **0.041** gal/ft = **0.36** gallons

Volume of Water in Filter Pack:

Gallons/foot = 0.041 x (D^2 - d^2), where D is total borehole diameter in inches & d is casing diameter in inches = **0.041** x ((**2.5**)^2 - (**1**)^2) = **0.22** gal/ft.

Filter Pack Volume (gal) = (the less of the filter pack length or water column) x gal/ft x porosity (0.3) = (**8.82**)ft x (**0.22**) gal/ft x **0.3** = **0.57** gal

Purge Well Volume: Purge well Volume = Filter pack volume + Well Volume = **0.57** gal + **0.36** gal = **0.93** gal.

1 x Purge Well Volume	2 x Purge Well Volume	3 x Purge Well Volume	4 x Purge Well Volume	5 x Purge Well Volume
0.93	**1.86**	**2.79**	**3.72**	**4.65**

Development Record

Time (24 hrs)	Volume Removed (gal)	Water Level (ft) (TOC)	Turbidity (NTU)	Clarity (color)	Temp (C)	pH (Std Units)	Conductivity (µS/cm)	D O (mg/L)	Redox (mV)	Comments
0930	0	3.18	71000	BROWN	31.6	7.01	416	0.39	30.4	ORGANIC ODOR
0935	1.1	3.43	246	AMBER	31.5	6.99	412	0.31	29.5	ORGANIC ODOR
0945	3.3	3.51	25.1	AMBER	31.5	6.98	410	0.28	28.7	ORGANIC ODOR
1000	6.5	3.48	10.8	AMBER	31.4	6.98	408	0.19	28.0	ORGANIC ODOR

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
BLDG19-MW06	FORMER LFNAS BUILDING 19 UST AREA	9300836	23 AUG 2016

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [ ] Above Grade (AG)
- [x] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [x] Shallow (Water-Table) Monitoring
- [ ] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
12	12	3.25	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.0 in. Sch. 40 PVC	[x] Flush- [ ] Other	1.7 feet from -0.3 feet to 2 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.0 in. Sch. 40 PVC	0.010 in.	10 feet from 2 feet to 12 feet

1st Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	1st Surface Casing I.D. (inches): N/A	1st Surface Casing Length: 0 feet from 0 feet to 0 feet
2nd Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	2nd Surface Casing I.D. (inches): N/A	2nd Surface Casing Length: 0 feet from 0 feet to 0 feet
3rd Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	3rd Surface Casing I.D. (inches): N/A	3rd Surface Casing Length: 0 feet from 0 feet to 0 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Mesh Sand	[x] Yes [ ] No	10.5 feet from 1.5 feet to 12 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Mesh Silica Sand	0.5 feet from 1 feet to 1.5 feet

Surface Seal Material:	Surface Seal Length:
Cement-Bentonite Grout	0.5 feet from -0.5 feet to 1 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
24 AUG 2016	[x] Surge/Pump [ ] Pump [ ] Compressed Air [ ] Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [x] Peristaltic [ ] Submersible [ ] Other (describe)	3.16

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.5	0.36	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	22.5	45	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Cloudy	Clear

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Project Number: 500108

Form Completed by: Anthony Cinelli (CB&I)

Monitoring Well Volume Calculations

Volume of Water in Casing: Gallons/foot = 0.041 x d^2, where casing diameter in inches = (0.041 x (1)^2) = **0.041** gal/ft.

Well Volume (gallons) = Water Column (ft) x Gal/ft = **8.84** ft x **0.041** gal/ft = **0.36** gallons

Volume of Water in Filter Pack:

Gallons/foot = 0.041 x (D^2 - d^2), where D is total borehole diameter in inches & d is casing diameter in inches =**0.041** x ((**2.5**)^2- (**1**)^2) = **0.22** gal/ft.

Filter Pack Volume (gal) = (the less of the filter pack lenght or water column) x gal/ft x porosity (0.3) = (**8.84**)ft x (**0.22**) gal/ft x **0.3** = **0.58** gal

Purge Well Volume: Purge well Volume = Filter pack volume + Well Volume = **0.58** gal + **0.36** gal = **0.94** gal.

1 x Purge Well Volume	2 x Purge Well Volume	3 x Purge Well Volume	4 x Purge Well Volume	5 x Purge Well Volume
0.94	**1.88**	**2.82**	**3.76**	**4.7**

Development Record

Time (24 hrs)	Volume Removed (gal)	Water Level (ft) (TOC)	Turbidity (NTU)	Clarity (color)	Temp (C)	pH (Std Units)	Conductivity (µS/cm)	D O (mg/L)	Redox (mV)	Comments
1015	0	3.16	71000	BROWN	31.7	7.03	420	0.37	30.1	ORGANIC ODOR
1020	1.1	3.23	311	AMBER	31.5	7.01	418	0.35	29.9	ORGANIC ODOR
1030	3.3	3.48	30	AMBER	31.4	6.98	415	0.29	29	ORGANIC ODOR
1045	6.5	3.52	17.1	AMBER	31.3	6.99	409	0.20	27.7	ORGANIC ODOR

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
BLDG19-MW07	FORMER LFNAS BUILDING 19 UST AREA	9300836	23 AUG 2016

Well Location and Type (check appropriate boxes):
- [x] On-Site
- [ ] Right-of-Way
- [ ] Off-Site Private Property
- [ ] Above Grade (AG)
- [x] Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- [ ] Perched Monitoring
- [x] Shallow (Water-Table) Monitoring
- [ ] Intermediate or Deep Monitoring
- [ ] Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3.63	6	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1.0 in. Sch. 40 PVC	[x] Flush- [ ] Other	29.74 feet from -0.26 feet to 30 feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1.0 in. Sch. 40 PVC	0.010 in.	5 feet from 30 feet to 35 feet

1st Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	1st Surface Casing I.D. (inches): N/A	1st Surface Casing Length: 0 feet from 0 feet to 0 feet
2nd Surface Casing Material: N/A also check: [ ] Permanent [ ] Temporary	2nd Surface Casing I.D. (inches): N/A	2nd Surface Casing Length: 0 feet from 0 feet to 0 feet
3rd Surface Casing Material: NA also check: [ ] Permanent [ ] Temporary	3rd Surface Casing I.D. (inches): N/A	3rd Surface Casing Length: 0 feet from 0 feet to 0 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Mesh Sand	[x] Yes [ ] No	6 feet from 29 feet to 35 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Mesh Silica Sand (28 ft to 29 ft) 1/4" Hydrated Bentonite Pellets (25 ft to 28 ft)	5 feet from 28 feet to 29 feet

Surface Seal Material:	Surface Seal Length:
Cement-Bentonite Grout	27.5 feet from -0.5 feet to 28 feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
24 AUG 2016	[x] Surge/Pump [ ] Pump [ ] Compressed Air [ ] Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
[ ] Centrifugal [x] Peristaltic [ ] Submersible [ ] Other (describe)	3.19

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.5	0.02	[ ] Yes [x] No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
[x] Continuous [ ] Intermittent	22.5	45	[x] Yes [ ] No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Cloudy	Clear

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Project Number: 500108

Form Completed by: Anthony Cinelli (CB&I)

Monitoring Well Volume Calculations

Volume of Water in Casing: Gallons/foot = 0.041 x d^2, where casing diameter in inches = (**0.041** x (**1**)^2) = **0.041** gal/ft.

Well Volume (gallons) = Water Column (ft) x Gal/ft = **31.81** ft x **0.041** gal/ft = **1.30** gallons

Volume of Water in Filter Pack:

Gallons/foot = 0.041 x (D^2 - d^2), where D is total borehole diameter in inches & d is casing diameter in inches =**0.041** x ((**2.5**)^2- (**1**)^2) = **0.22** gal/ft.

Filter Pack Volume (gal) = (the less of the filter pack length or water column) x gal/ft x porosity (0.3) = (**5**)ft x (**0.22**) gal/ft x **0.3** = **0.33** gal

Purge Well Volume: Purge well Volume = Filter pack volume + Well Volume = **0.33** gal + **1.30** gal = **1.63** gal.

1 x Purge Well Volume	2 x Purge Well Volume	3 x Purge Well Volume	4 x Purge Well Volume	5 x Purge Well Volume
1.63	**3.26**	**4.89**	**6.52**	**8.15**

Development Record

Time (24 hrs)	Volume Removed (gal)	Water Level (ft) (TOC)	Turbidity (NTU)	Clarity (color)	Temp (C)	pH (Std Units)	Conductivity (µS/cm)	D O (mg/L)	Redox (mV)	Comments
1100	0	3.19	71000	BROWN	31.5	7.05	399	0.29	27.7	ORGANIC ODOR
1105	1.1	3.15	468	AMBER	31.3	7.03	396	0.28	27.3	ORGANIC ODOR
1115	3.3	3.17	224	AMBER	31.0	6.99	387	0.27	26.8	ORGANIC ODOR
1130	6.5	3.17	21	AMBER	31.0	6.95	380	0.27	26.6	ORGANIC ODOR
1145	9.5	3.15	12	AMBER	30.8	6.99	378	0.27	26.3	ORGANIC ODOR

APPENDIX E

DATA VALIDATION PACKAGE AND DATA QUALITY REVIEW

(PROVIDED ELECTRONICALLY)

APPENDIX F

SURVEY DATA

GUSTIN, COTHERN & TUCKER, INC.

Surveying & Mapping

121 Hart Street | Niceville, FL 32578

Phone (850) 678-5141 | www.gct-survmap.com

Building 19 UST - Lee NAS

DESCRIPTION	LATITUDE (N)	LONGITUDE (W)	NORTHING	EASTING	TC ELEV.	GRND. ELEV.
SE COR BLDG 19	29°58'37.68842"	081°39'21.41521"	2052207.97	448484.92		12.6
SW COR BLDG 19	29°58'37.07456"	081°39'23.72078"	2052147.12	448281.79		12.6
UST19-MW-5	29°58'36.69494"	081°39'22.18505"	2052107.99	448416.63	12.46	12.6
UST19-MW-6	29°58'36.83506"	081°39'23.50022"	2052122.81	448301.05	12.90	13.2
UST19-MW-7	29°58'37.30216"	081°39'22.34929"	2052169.42	448402.54	13.14	13.4

CERTIFICATION:

Latitude and Longitude are North American Datum 1983 (NAD83), Geographic Coordinates. Horizontal Datum is NAD 83, FL East Zone, U.S. Survey Foot. Vertical Datum is North American Vertical Datum 1988 (NAVD88), US Survey Foot. I hereby certify that the positions listed above meet or exceed Third-order, Class I (1:10,000) Horizontal accuracy and Third-Order Vertical accuracy.

HORACE WAYNE WALKER, JR. LICENSE NUMBER 5029 STATE OF FLORIDA Professional Surveyor and Mapper

31-Oct-2016

Horace Wayne Walker Jr. - P.L.S. No. 5029

APPENDIX G

APPROVAL TO USE BENZO(A)PYRENE ALTERNATIVE SOIL CLEANUP TARGET LEVELS

FLORIDA DEPARTMENT OF
Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

August 22, 2019

Clay County Port Inc (CCPI).
1065 Bulkhead Road
Green Cove Springs, Florida 32043
Mr. Ted McGowan
Ted@Reynoldspark.com

RE: **Request for Benzo [a] pyrene (BaP) Alternate Soil Cleanup Target Level (ASCTL) Building 19 Underground Storage Tank (UST) Area, FUDS Project No. I04FL0085-14, Former Lee Field Naval Air Station (NAS), Green Cove Springs, Clay County, Florida**

Dear Mr. McGowan:

The Department has reviewed the two documents, dated July 26 and July 29, 2019 (received on August 6, 2019), regarding the CCPI request to use the BaP ASCTL at the Lee Field Building 19 UST site. Based on this review, the Department has the following comments.

The Department concurs with the HSWMR justification for use of the BaP ASCTL residential direct exposure (DE) value of 1.0 mg/kg in the University of Florida Center for Environmental and Human Toxicology (UFCEHT) letter dated August 1, 2017 (see attachment). As such, the Department approves, on a site-specific basis, the BaP ASCTL for the Building 19 UST site.

This approval will allow for the issuance of a Site Rehabilitation Completion Order (SRCO) meeting the requirements for a Risk Management Option (RMO) III, No Further Action (NFA) outcome under subsection 62-780.680 (3). Based on a recent conversation with the U.S Army Corps of Engineers (USACE), since USACE was the primary agent responsible for contamination assessment and remediation activities, with CCPI concurrence, USACE will assume the responsibility for sending out the notification letters to the current tenants, the City of Green Cove Springs, Clay County and the St. Johns River Water Management.

If you require additional clarification or other assistance, please feel free to contact myself at 850-245-8984 or my e-mail jim.mccarthy@FloridaDep.gov or John Winters at (850)-245-8999 or his e-mail John.Winters@FloridaDEP.gov

Sincerely,

A. James McCarthy Jr, PG
Professional Geologist II
Remedial Project Manager
DoD, Brownfields & CERCLA Programs
Waste Cleanup Program

LB/jm 

Attachment: UFCEHT. August 1, 2017 BaP ASCTL letter.

ec:

John Winters, PG II-FDEP DoD, john.winters@FloridaDep.gov
Jeff Lockwood, PE, FDEP DoD -jeff.lockwood@FloridaDEP.gov
Laura Barrett, FDEP Laura.K.Barrett@FloridaDep.gov
John Keiser, P.E., USACE John.E.Keiser@usace.army.mil
Andrew Rebman, USAE Andrew.J.Rebman@usace.army.mil
Christopher Teaf, PhD. HSWMR cteaf@hswmr.com
Ashwin Patel, FDEP Ashwin.Patel@FloridaDep.gov
Ken Cunningham, PG, APTIM, Inc. Kenneth.Cunningham@APTIM.com
File

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I⌀HFL⌀⌀85

Clay County PORT INC.
REYNOLDS INDUSTRIAL PARK

1065 BULKHEAD ROAD
POST OFFICE BOX 477
GREEN COVE SPRINGS, FLORIDA 32043-0477
(904) 284-3676 • 284-3505
FAX 284-5858

July 26, 2019

RECEIVED
AUG 0 6 2019
WASTE CLEANUP PROGRAM

VIA EMAIL AND FIRST CLASS MAIL

James McCarthy Jr, PG
Florida Department of Environmental Protection
Waste Cleanup Program
2600 Blair Stone Road
Tallahassee, FL 32399

Re: Building 19 UST Area, Former Lee Field Naval Air Station, Green Cove Springs, Florida - Request to Utilize ASCTL Cleanup Standards for BaP Soil Contamination

Dear Jim:

Thank you for your inquiry regarding the intentions of Clay County Port, Inc. with respect to the final soil cleanup standards for the Building 19 UST Area. As you noted, this area is being remedied by the U.S. Army Corps of Engineers under the FUDS program. We have consulted Dr. Christopher Teaf on this issue and his letter report to CCP is attached. In short, Dr. Teaf finds that the ASCTL remediation standard for BaP soil contamination will be protective of human health and the environment in a future residential use setting and without the need for institutional or engineering controls.

Therefore, we are requesting the use the ASCTL standard for BaP soil contaminants for Building 19. We understand the Department will issue the appropriate regulatory No Further Action documentation (RMO III) permitting unrestricted residential use of this area without institutional or engineering controls.

Thank you again for your assistance and attention to this matter.

Sincerely,

Ted McGowan

Cc: Christopher Teaf, PhD.
Jeffrey J. Davidson, Esq.

HSWMR

Hazardous Substance & Waste Management Research, Inc.

2976 Wellington Circle West
Tallahassee, Florida 32309
Phone: (850) 681-6894
Fax: (850) 906-9777
www.hswmr.com

July 29, 2019

Mr. Ted McGowan, Executive Director
Clay County Port, Inc.
1065 Bulkhead Road
Green Cove Springs, FL 32043-0477

Re: ASCTL Request for BaP in Soil at Building 19 UST Area
Former Lee Field Naval Air Station, Green Cove Springs, Florida

Dear Ted:

Clay County Port (CCP) has requested our view regarding potential use at the Building 19 UST Area of the benzo(a)pyrene (BaP) toxic equivalents (TEQ) Alternative Soil Cleanup Target Level (ASCTL). That health-based criterion was set forth in a University of Florida letter to the Florida Department of Environmental Protection (FDEP) dated August 1, 2017. The ultimate use for this section of the property, pending further development decisions, is anticipated to be unrestricted, which could include residential. Therefore, CCP could request the use of the residential direct exposure BaP TEQ ASCTL of 1.0 mg/kg. In our view, a regulatory closure based on the unrestricted use, residential ASCTL would be protective of human health and provide the greatest flexibility for future development of the property by the Port.

Based on our review of Table 4-2 (see attached copy of BaP TEQ Conversion Table) from the May 2019 Draft Final, Revision 1 Site Assessment Report for the Building 19 UST Area (Draft Final SAR; U.S. Army Corps of Engineers, 2019), the maximum BaP TEQ concentration reported for soils from surface to two feet below land surface was 0.3 mg/kg in two samples (XB001 at 0 to 0.5 feet and XB0018 at 0 to 0.5 feet). Fourteen of the 28 samples were reported as 0.0 mg/kg, given that the official FDEP BaP TEQ conversion tables present results to one decimal place only. As reported in the Draft Final SAR, dated May 2019, no other substances were detected in surface soil in excess of their respective default residential SCTLs.

As a point of reference, although the August 2017 cleanup targets that were developed for FDEP by the University of Florida are termed Alternative Soil Cleanup Target Levels (ASCTLs), they have as their basis all of the same non-chemical-specific exposure assumptions that are used for development of the default SCTLs. The only differences are that development of the ASCTLs was based on updated toxicological guidance and chemical-specific exposure guidance (e.g., dermal absorption), and they were developed outside of the formal FDEP rule

development process. Therefore, rather than a 62-780 Risk Management Option Level I (RMO I) No Further Action (NFA) proposal (comparison against default residential SCTLs), you could present a RMO III request for NFA without controls, based on application of ASCTLs [62-780.680(3)]. No controls are stipulated because, as expressed in the Rule, controls are not required when the ASCTLs are based on non-site-specific exposure factors, as is the case here for the BaP TEQ ASCTLs.

In summary, site conditions as summarized in the existing database for the Building 19 UST Area do not represent a significant human health risk and, thus, they warrant the regulatory implementation of the requested NFA without controls.

Once you have had an opportunity to review this information, please call Doug Covert or me at (850) 681-6894 to discuss how we may further assist you.

Regards,

Christopher M. Teaf, Ph.D.
President & Director of Toxicology

CMT/djc

Attachments (1)

cc: Jeffrey Davidson, Manatt, Phelps & Phillips

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

TEF = Toxic Equivalency Factor

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

	Soil Sample #	XB0001	XB0002	XB0003	XB0004	XB0005	XB0006	XB0008	XB0009	XB0011	XB0012
	Sample Date	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016
	Sample Location:	B19SO-01	B19SO-01	B19SO-01	B19SO-01	B19SO-02	B19SO-02	B19SO-03	B19SO-03	B19SO-04	B19SO-04
	Depth (ft):	0.0-0.5	0.5-2.0	0.5-2.0	2.0-4.0	0.5-2.0	0.5-2.0	0.0-0.5	0.5-2.0	0.0-0.5	0.5-2.0
Contaminant Concentrations											
Contaminant	**TEF**	XB0001 (mg/kg)	XB0002 (mg/kg)	XB0003 (mg/kg)	XB0004 (mg/kg)	XB0005 (mg/kg)	XB0006 (mg/kg)	XB0008 (mg/kg)	XB0009 (mg/kg)	XB0011 (mg/kg)	XB0012 (mg/kg)
Benzo(a)pyrene	1.0	0.228	0.00057	0.001	0.00078	0.0907	0.00572	0.0505	0.00577	0.058	0.00112
Benzo(a)anthracene	0.1	0.0308	0.0021	0.0022	0.002	0.0412	0.00481	0.0429	0.0383	0.0602	0.0019
Benzo(b)fluoranthene	0.1	0.284	0.0021	0.0022	0.002	0.143	0.00959	0.0805	0.00927	0.147	0.0019
Benzo(k)fluoranthene	0.01	0.0978	0.0011	0.000636	0.001	0.0418	0.00321	0.0283	0.00344	0.0472	0.000647
Chrysene	0.001	0.0456	0.0021	0.0022	0.002	0.0581	0.00548	0.0524	0.00749	0.0804	0.0019
Dibenz(a,h)anthracene	1.0	0.0361	0.0021	0.0022	0.002	0.0183	0.0018	0.0087	0.0018	0.0138	0.0019
Indeno(1,2,3-cd)pyrene	0.1	0.175	0.0011	0.000668	0.000885	0.084	0.00475	0.0392	0.00552	0.0752	0.000982
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0001 (mg/kg)	XB0002 (mg/kg)	XB0003 (mg/kg)	XB0004 (mg/kg)	XB0005 (mg/kg)	XB0006 (mg/kg)	XB0008 (mg/kg)	XB0009 (mg/kg)	XB0011 (mg/kg)	XB0012 (mg/kg)
Benzo(a)pyrene	1.0	0.2280	0.0006	0.0010	0.0008	0.0907	0.0057	0.0505	0.0058	0.0580	0.0011
Benzo(a)anthracene	0.1	0.0031	0.0002	0.0002	0.0002	0.0041	0.0005	0.0043	0.0038	0.0060	0.0002
Benzo(b)fluoranthene	0.1	0.0284	0.0002	0.0002	0.0002	0.0143	0.0010	0.0081	0.0009	0.0147	0.0002
Benzo(k)fluoranthene	0.01	0.0010	0.0000	0.0000	0.0000	0.0004	0.0000	0.0003	0.0000	0.0005	0.0000
Chrysene	0.001	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001	0.0000	0.0001	0.0000
Dibenz(a,h)anthracene	1.0	0.0361	0.0021	0.0022	0.0020	0.0183	0.0018	0.0087	0.0018	0.0138	0.0019
Indeno(1,2,3-cd)pyrene	0.1	0.0175	0.0001	0.0001	0.0001	0.0084	0.0005	0.0039	0.0006	0.0075	0.0001
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.3**	**0.0**	**0.0**	**0.0**	**0.1**	0.0	**0.1**	**0.0**	**0.1**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0001 (mg/kg)**	**XB0002 (mg/kg)**	**XB0003 (mg/kg)**	**XB0004 (mg/kg)**	**XB0005 (mg/kg)**	**XB0006 (mg/kg)**	**XB0008 (mg/kg)**	**XB0009 (mg/kg)**	**XB0011 (mg/kg)**	**XB0012 (mg/kg)**
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		OK	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0014	XB0015	XB0016	XB0017	XB0018	XB0019	XB0021	XB0022	XB0023	XB0024
	Sample Date	8/17/2016	8/17/2016	8/17/2016	8/17/2016	8/18/2016	8/18/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016
	Sample Location:	B19SO-05	B19SO-05	B19SO-05	B19SO-05	B19SO-06	B19SO-06	B19SO-07	B19SO-07	B19SO-07	B19SO-08
	Depth (ft):	0.0-0.5	0.0-0.5	0.5-2.0	2.0-4.0	0.0-0.5	0.5-2.0	0.0-0.5	0.5-2.0	2.0-4.0	0.0-0.5
Contaminant Concentrations											
Contaminant	**TEF**	XB0014 (mg/kg)	XB0015 (mg/kg)	XB0016 (mg/kg)	XB0017 (mg/kg)	XB0018 (mg/kg)	XB0019 (mg/kg)	XB0021 (mg/kg)	XB0022 (mg/kg)	XB0023 (mg/kg)	XB0024 (mg/kg)
Benzo(a)pyrene	1.0	0.0888	0.0821	0.00919	0.00506	0.219	0.000627	0.129	0.0573	0.00174	0.0834
Benzo(a)anthracene	0.1	0.0539	0.0535	0.00587	0.00347	0.135	0.0017	0.105	0.00449	0.0021	0.0655
Benzo(b)fluoranthene	0.1	0.133	0.142	0.0143	0.00766	0.29	0.0017	0.209	0.00837	0.00314	0.139
Benzo(k)fluoranthene	0.01	0.0452	0.0471	0.00522	0.00268	0.105	0.0009	0.0743	0.00432	0.00108	0.0504
Chrysene	0.001	0.0637	0.0804	0.00768	0.00378	0.153	0.0017	0.118	0.00488	0.0021	0.0932
Dibenz(a,h)anthracene	1.0	0.0102	0.00993	0.0022	0.002	0.0321	0.0017	0.0161	0.002	0.0021	0.0133
Indeno(1,2,3-cd)pyrene	0.1	0.0606	0.0535	0.00705	0.00374	0.183	0.0009	0.0764	0.0042	0.00129	0.0789
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0014 (mg/kg)	XB0015 (mg/kg)	XB0016 (mg/kg)	XB0017 (mg/kg)	XB0018 (mg/kg)	XB0019 (mg/kg)	XB0021 (mg/kg)	XB0022 (mg/kg)	XB0023 (mg/kg)	XB0024 (mg/kg)
Benzo(a)pyrene	1.0	0.0888	0.0821	0.0092	0.0051	0.2190	0.0006	0.1290	0.0573	0.0017	0.0834
Benzo(a)anthracene	0.1	0.0054	0.0054	0.0006	0.0003	0.0135	0.0002	0.0105	0.0004	0.0002	0.0066
Benzo(b)fluoranthene	0.1	0.0133	0.0142	0.0014	0.0008	0.0290	0.0002	0.0209	0.0008	0.0003	0.0139
Benzo(k)fluoranthene	0.01	0.0005	0.0005	0.0001	0.0000	0.0011	0.0000	0.0007	0.0000	0.0000	0.0005
Chrysene	0.001	0.0001	0.0001	0.0000	0.0000	0.0002	0.0000	0.0001	0.0000	0.0000	0.0001
Dibenz(a,h)anthracene	1.0	0.0102	0.0099	0.0022	0.0020	0.0321	0.0017	0.0161	0.0020	0.0021	0.0133
Indeno(1,2,3-cd)pyrene	0.1	0.0061	0.0054	0.0007	0.0004	0.0183	0.0001	0.0076	0.0004	0.0001	0.0079
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.1**	**0.1**	**0.0**	**0.0**	**0.3**	**0.0**	**0.2**	**0.1**	**0.0**	**0.1**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0014 (mg/kg)**	**XB0015 (mg/kg)**	**XB0016 (mg/kg)**	**XB0017 (mg/kg)**	**XB0018 (mg/kg)**	**XB0019 (mg/kg)**	**XB0021 (mg/kg)**	**XB0022 (mg/kg)**	**XB0023 (mg/kg)**	**XB0024 (mg/kg)**
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0025	XB0027	XB0028	XB0029	XB0030	XB0031	XB0032	XB0033	XB0034	XB0035
	Sample Date	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016	8/18/2016
	Sample Location:	B19SO-08	B19SO-09	B19SO-09	B19SO-09	B19SO-10	B19SO-10	B19SO-10	B19SO-10	B19SO-11	B19SO-11
	Depth (ft):	0.5-2.0	0.0-0.5	0.5-2.0	2.0-4.0	0.0-0.5	0.5-2.0	0.5-2.0	2.0-4.0	0.0-0.5	0.5-2.0
Contaminant Concentrations											
Contaminant	**TEF**	XB0025 (mg/kg)	XB0027 (mg/kg)	XB0028 (mg/kg)	XB0029 (mg/kg)	XB0030 (mg/kg)	XB0031 (mg/kg)	XB0032 (mg/kg)	XB0033 (mg/kg)	XB0034 (mg/kg)	XB0035 (mg/kg)
Benzo(a)pyrene	1.0	0.0105	0.0287	0.00346	0.0165	0.0282	0.0482	0.103	0.0225	0.0468	0.00115
Benzo(a)anthracene	0.1	0.00874	0.0217	0.0035	0.0139	0.0213	0.0369	0.129	0.0153	0.0287	0.002
Benzo(b)fluoranthene	0.1	0.0175	0.0439	0.00546	0.0293	0.0534	0.0887	0.154	0.0412	0.0643	0.002
Benzo(k)fluoranthene	0.01	0.00621	0.0151	0.00204	0.00965	0.0174	0.0298	0.0574	0.0133	0.0247	0.00065
Chrysene	0.001	0.0126	0.0261	0.00399	0.0187	0.0276	0.0559	0.123	0.0224	0.033	0.002
Dibenz(a,h)anthracene	1.0	0.0018	0.0096	0.00199	0.00249	0.00417	0.0097	0.0144	0.0097	0.0103	0.002
Indeno(1,2,3-cd)pyrene	0.1	0.00912	0.0229	0.0025	0.0122	0.0204	0.0375	0.0751	0.0173	0.0536	0.001
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0025 (mg/kg)	XB0027 (mg/kg)	XB0028 (mg/kg)	XB0029 (mg/kg)	XB0030 (mg/kg)	XB0031 (mg/kg)	XB0032 (mg/kg)	XB0033 (mg/kg)	XB0034 (mg/kg)	XB0035 (mg/kg)
Benzo(a)pyrene	1.0	0.0105	0.0287	0.0035	0.0165	0.0282	0.0482	0.1030	0.0225	0.0468	0.0012
Benzo(a)anthracene	0.1	0.0009	0.0022	0.0004	0.0014	0.0021	0.0037	0.0129	0.0015	0.0029	0.0002
Benzo(b)fluoranthene	0.1	0.0018	0.0044	0.0005	0.0029	0.0053	0.0089	0.0154	0.0041	0.0064	0.0002
Benzo(k)fluoranthene	0.01	0.0001	0.0002	0.0000	0.0001	0.0002	0.0003	0.0006	0.0001	0.0002	0.0000
Chrysene	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0000
Dibenz(a,h)anthracene	1.0	0.0018	0.0096	0.0020	0.0025	0.0042	0.0097	0.0144	0.0097	0.0103	0.0020
Indeno(1,2,3-cd)pyrene	0.1	0.0009	0.0023	0.0003	0.0012	0.0020	0.0038	0.0075	0.0017	0.0054	0.0001
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.0**	**0.0**	**0.0**	0.0	0.0	0.1	0.2	0.0	**0.1**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0025 (mg/kg)**	**XB0027 (mg/kg)**	**XB0028 (mg/kg)**	**XB0029 (mg/kg)**	**XB0030 (mg/kg)**	**XB0031 (mg/kg)**	**XB0032 (mg/kg)**	**XB0033 (mg/kg)**	**XB0034 (mg/kg)**	**XB0035 (mg/kg)**
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Benzo(a)pyrene Conversion Table

For Direct Exposure Alternative Soil Cleanup Target Levels (ASCTL)

Instructions can be found below the table

Facility/Site Name:	Lee Field
Site Location:	Green Cove Springs
Facility/Site ID No.:	Building 19 UST Area

ASCTL Type	Value	Units
Residential Direct Exposure	1.0	mg/kg
Industrial Direct Exposure	3.1	mg/kg
Site Specific Background (Optional)		mg/kg

TEF = Toxic Equivalency Factor

	Soil Sample #	XB0036	XB0037	XB0038	XB0039	XB0040					
	Sample Date	8/18/2016	8/17/2016	8/17/2016	8/17/2016	8/17/2016					
	Sample Location:	B19SO-11	B19SO-12	B19SO-12	B19SO-12	B19SO-12					
	Depth (ft):	2.0-4.0	0.0-0.5	0.5-2.0	2.0-4.0	2.0-4.0					
Contaminant Concentrations											
Contaminant	**TEF**	XB0036 (mg/kg)	XB0037 (mg/kg)	XB0038 (mg/kg)	XB0039 (mg/kg)	XB0040 (mg/kg)					
Benzo(a)pyrene	1.0	0.00355	0.0498	0.00559	0.00216	0.00672					
Benzo(a)anthracene	0.1	0.0025	0.0419	0.00444	0.00196	0.00585					
Benzo(b)fluoranthene	0.1	0.00584	0.111	0.0105	0.00419	0.0117					
Benzo(k)fluoranthene	0.01	0.00188	0.0362	0.00341	0.00133	0.00406					
Chrysene	0.001	0.003	0.0624	0.00594	0.00229	0.00679					
Dibenz(a,h)anthracene	1.0	0.0021	0.00659	0.0018	0.0018	0.002					
Indeno(1,2,3-cd)pyrene	0.1	0.00379	0.031	0.00361	0.00141	0.00376					
Benzo(a)pyrene Equivalents											
Contaminant	**TEF**	XB0036 (mg/kg)	XB0037 (mg/kg)	XB0038 (mg/kg)	XB0039 (mg/kg)	XB0040 (mg/kg)					
Benzo(a)pyrene	1.0	0.0036	0.0498	0.0056	0.0022	0.0067	0.0000	0.0000	0.0000	0.0000	0.0000
Benzo(a)anthracene	0.1	0.0003	0.0042	0.0004	0.0002	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000
Benzo(b)fluoranthene	0.1	0.0006	0.0111	0.0011	0.0004	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000
Benzo(k)fluoranthene	0.01	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Chrysene	0.001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dibenz(a,h)anthracene	1.0	0.0021	0.0066	0.0018	0.0018	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000
Indeno(1,2,3-cd)pyrene	0.1	0.0004	0.0031	0.0004	0.0001	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000
Total Equivalents											
Total Benzo(a)pyrene Equivalents		**0.0**	0.1	**0.0**	0.0	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Comparisons to SCTLs											
Does This Sample Exceed:		**XB0036 (mg/kg)**	**XB0037 (mg/kg)**	**XB0038 (mg/kg)**	**XB0039 (mg/kg)**	**XB0040 (mg/kg)**					
The Residential Direct Exposure ASCTL of 1.0 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
The Industrial Direct Exposure ASCTL of 3.1 mg/kg?		**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**	**OK**
No Site Specific Background Given		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**