US Army Corps of Engineers®

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FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM UPDATE 2016

Introduction

The *Formerly Utilized Sites Remedial Action Program Update* provides information about progress the U.S. Army Corps of Engineers is making in cleaning up sites with contamination resulting from the Nation's early atomic energy program. The Formerly Utilized Sites Remedial Action Program (FUSRAP) was initiated in 1974 to identify, investigate, and if necessary, clean up or control sites throughout the United States contaminated as a result of Manhattan Engineer District (MED) or early Atomic Energy Commission (AEC) activities. Both the MED and the AEC were predecessors of the U.S. Department of Energy (DOE).

Congress transferred administration and execution of FUSRAP cleanups from the DOE to the Corps of Engineers in October 1997. The Corps of Engineers continues to address sites the DOE began, sites that were referred to the Corps of Engineers by the DOE's Office of Legacy Management under a Corps of Engineers/DOE Memorandum of Understanding, and sites added to the program by Congress.

The U.S. Army Corps of Engineers' FUSRAP objectives are to safely, effectively, and efficiently:

- Identify and evaluate sites where authority and the need for a response action exist.
- Clean up or control FUSRAP sites to ensure protection of human health and the environment.
- Dispose of or stabilize radioactive material in a way that is safe for the public and the environment.
- Perform work in compliance with applicable federal, state, and local environmental laws and regulations.
- Return sites for appropriate future use.

When executing FUSRAP, the Corps of Engineers follows the framework of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This framework is shown on Page 5. Each site may have multiple operable units (OUs), each in a different phase of the CERCLA process.

The Corps of Engineers is committed to informing and involving the public as it progresses through the decision-making process for each site. The Corps of Engineers coordinates response actions with the U.S. Environmental Protection Agency (EPA) and/or state environmental regulatory agencies on all sites.

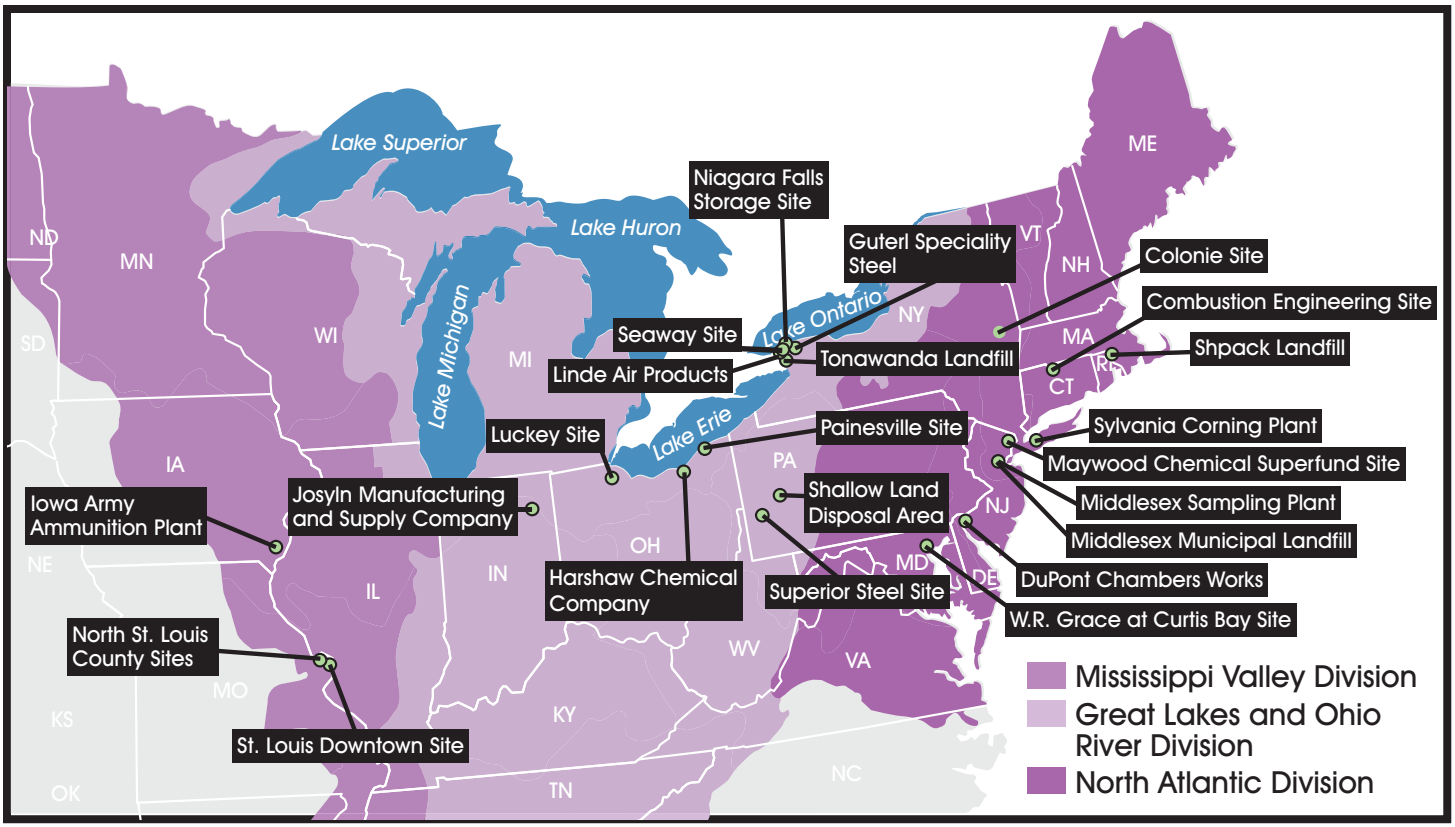
Two years after the Corps of Engineers completes a response action and final closeout activities at a FUSRAP site, that site, along with responsibility for any necessary long-term stewardship, reverts to the DOE. Sites that have been transferred back to the DOE's Office of Legacy Management for long-term stewardship are the Wayne Interim Storage Site, Newark, New Jersey; the Bliss and Laughlin Site, Buffalo, New York; the Ashland 1 Site, including Seaway Area D, Tonawanda, New York; and the Ashland 2 Site including Rattlesnake Creek, Tonawanda, New York.

Seven districts from three Corps of Engineers divisions work on 25 active FUSRAP sites in 10 states. Districts involved in FUSRAP are Buffalo and Pittsburgh from the Great Lakes and Ohio River Division; St. Louis from the Mississippi Valley Division; and Baltimore, New England, New York, and Philadelphia from the North Atlantic Division. The Corps of Engineers' Environmental and Munitions Center of Expertise and the Kansas City District also provide technical assistance.

Since the Corps of Engineers began administering FUSRAP, program funding has ranged between $99.9 million and $140 million a year. The FUSRAP appropriation for fiscal year (FY) 2016 was $112 million. Progress and the schedule for each site is dependent on prioritization among all active FUSRAP sites taking into account the CERCLA phase they are in and the availability of FUSRAP funds nationally.

More FUSRAP information can be found at:
http://www.usace.army.mil/Missions/Environmental/FUSRAP.aspx

Active FUSRAP Site Locations

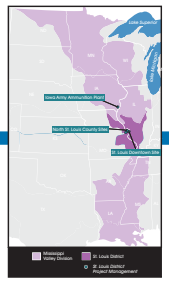


Acronyms

AEC	Atomic Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWC	Coldwater Creek
DOE	Department of Energy
DU	depleted uranium
EPA	Environmental Protection Agency
FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	fiscal year
IWCS	Interim Waste Containment Structure
MED	Manhattan Engineer District
MSP	Middlesex Sampling Plant
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFSS	Niagara Falls Storage Site
NRC	Nuclear Regulatory Commission
OU	operable unit
ROD	record of decision
RWDA	Radioactive Waste Disposal Area
SLAPS	St. Louis Airport Site

Active FUSRAP Sites

Mississippi Valley Division



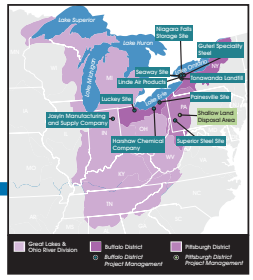
St. Louis District

Iowa Army Ammunition Plant, Middletown, Iowa

North St. Louis County Sites

- Latty Avenue Properties, St. Louis
- St. Louis Airport Site
- St. Louis Airport Site Vicinity Properties
- St. Louis Downtown Site

Great Lakes and Ohio River Division



Buffalo District

Joslyn Manufacturing and Supply Company, Fort Wayne, Indiana

Guterl Specialty Steel, Lockport, New York

Linde Air Products, Tonawanda, New York

Niagara Falls Storage Site, Lewiston, New York

Seaway Industrial Park, Tonawanda, New York

Tonawanda Landfill, Tonawanda, New York

Harshaw Chemical Company, Cleveland

Luckey Site, Luckey, Ohio

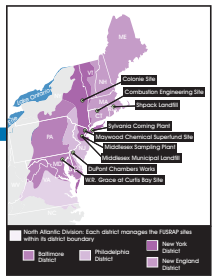
Painesville Site, Painesville, Ohio

Superior Steel, Carnegie, Pennsylvania

Pittsburgh District

Shallow Land Disposal Area, Parks Township, Pennsylvania

North Atlantic Division



Baltimore District

W.R. Grace at Curtis Bay Site, Baltimore

New England District

Combustion Engineering Site, Windsor, Connecticut

Shpack Landfill, Norton/Attleboro, Massachusetts

New York District

Maywood Chemical Superfund Site, Maywood, New Jersey

Middlesex Municipal Landfill, Middlesex, New Jersey

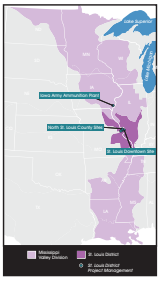
Middlesex Sampling Plant, Middlesex, New Jersey

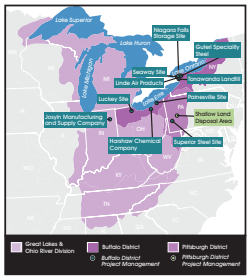
Colonie Site, Colonie, New York

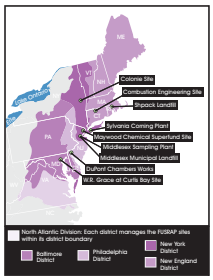
Sylvania Corning Plant, Hicksville, New York

Philadelphia District

DuPont Chambers Works, Deepwater, New Jersey





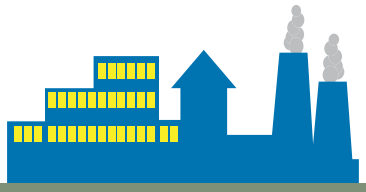


General Overview of the Manhattan Engineer District and Atomic Energy Commission Processes

Uranium Ore:
- Uranium-234
- Uranium-235
- Uranium-238

Mining

Uranium ore was obtained from the Belgian Congo or the western United States and Canada.



Milling

Uranium was separated from other natural materials in the ore.

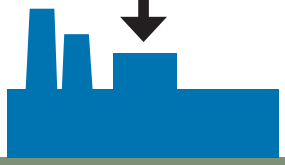
- *Linde Air Products*

Refining/Conversion

Products of refining/conversion:
- Uranium trioxide (orange oxide)
- Uranium dioxide (brown oxide)
- Uranium tetraflouride (green salt)
- Uranium hexaflouride

Produces a product that can be enriched.

- *Harshaw Chemical Company*
- *St. Louis Downtown Site*



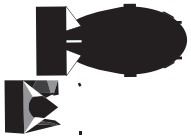
Enrichment (Gaseous Diffusion, etc.)

Increases the percentage of Uranium-235.

Uranium Metals and Metals Machining

Metals were manufactured, rolled, and shaped.

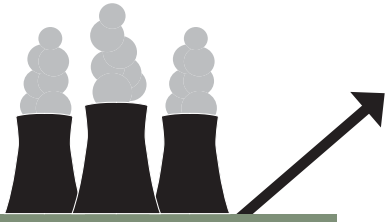
- *Colonie*
- *Combustion Engineering*
- *Guterl Specialty Steel*
- *Joslyn Manufacturing and Supply Company*
- *Superior Steel*



Weapons Development

Enriched uranium provided by other federal operations was sent to weapons production facilities. Other sites involved in early weapons production were used for beryllium and thorium production or were research facilities.

- *Iowa Army Ammunition Plant*
- *Luckey Site (beryllium)*
- *DuPont Chambers Works (research)*
- *Sylvania-Corning (research)*
- *Maywood Chemical Works (thorium)*
- *W.R. Grace (thorium)*



Nuclear Production Reactors

More useful nuclear material created.

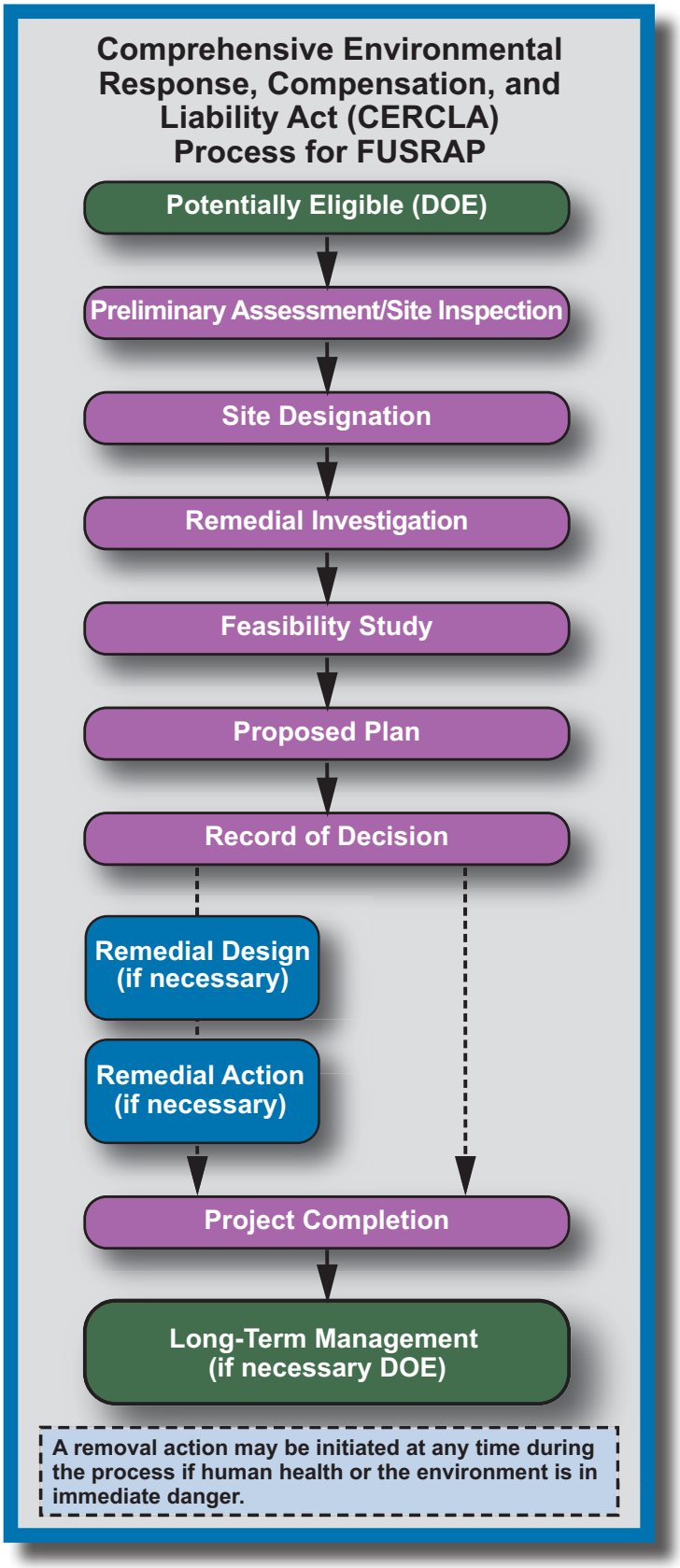
Waste Storage/Disposal

Wastes from processing were sent to facilities for storage/disposal.

- *Hazelwood Interim Storage Site/ Latty Avenue Vicinity Properties*
- *Middlesex Municipal Landfill*
- *Middlesex Sampling Plant*
- *Niagara Falls Storage Site*
- *Seaway Industrial Park*
- *St. Louis Airport Site*
- *St. Louis Airport Site Vicinity Properties*

Incidental Contamination

- *Painesville Site*
- *Tonawanda Landfill Vicinity Property*



CERCLA Process for FUSRAP

Preliminary Assessment/Site Inspection

To determine whether there has been a release or potential release that may require further action or investigation and to assess the nature of associated threats.

Remedial Investigation

To determine the nature and extent of the problem presented by the release.

To evaluate the fate and transport of contaminants through site media (e.g., groundwater, surface water).

To assess potential human health and ecological risks from contaminants in the environment.

Feasibility Study

To identify, develop, and evaluate remedial alternatives, analyzing in detail each remedial alternative for its:

1) Overall protection of human health and the environment.
2) Compliance with applicable or relevant and appropriate requirements.
3) Long-term effectiveness and permanence.
4) Reduction of toxicity, mobility, or volume through treatment.
5) Short-term effectiveness.
6) Implementability.
7) Cost.

Proposed Plan

To document the Corps of Engineers' preferred remedial alternative.

To seek and consider comments from federal and state environmental regulatory agencies.

To seek and consider comments from the public through a mandatory minimum 30-day public review period.

Record of Decision

To document the Corps of Engineers' selection of the remedial alternative based on the remedial investigation, the feasibility study, and comments received from federal and state environmental regulatory agencies and the public on the proposed plan.

Remedial Design (if necessary)

To develop detailed designs, plans, specifications, and bid documents for conducting the remedial action.

Remedial Action (if necessary)

Upon approval of the remedial design, remedial action (the actual construction and implementation of the selected remedial alternative) is initiated. The remedial action is conducted until the remedial action objectives are achieved.

Site Closeout

To document and demonstrate that the Corps of Engineers completed the response action in accordance with the record of decision (ROD) and in compliance with CERCLA, as amended, and the NCP.

Long-Term Management

Certain remedies may require a period of operation and maintenance, after the remedy is implemented, before the remedial action objectives and cleanup criteria are achieved.

Under FUSRAP, the Corps of Engineers must conduct necessary operations and maintenance and/or site monitoring for the first two years following remedy completion. After that time, the Corps of Engineers turns the site over to the DOE's Office of Legacy Management for long-term stewardship.

Site Updates

St. Louis District

Iowa Army Ammunition Plant
Middletown, Iowa

The Iowa Army Ammunition Plant is an active, government-owned facility that covers over 19,000 acres in southeastern Iowa. From 1947 to 1975, portions of the plant were under the control of the AEC for weapon-assembly operations and munitions testing resulting in uranium and munitions explosives contaminating the soils. In accordance with the signed Federal Facilities Agreement among the Corps of Engineers, DOE, EPA, and state of Iowa, the St. Louis District is addressing the plant areas formerly used by the AEC.

In September 2011, the district completed a ROD for OU 8, which addresses depleted uranium (DU) contamination using a sorting process to remove DU from the surrounding soil. This process allowed for less contaminated soil to be shipped off-site and saved money for the government and ultimately the taxpayer. Also under this ROD, the district completed decontamination at the Building 1-11 floor grate and Building 1-63-6 air filter in July 2015. Approximately 24,000 cubic yards of DU-contaminated soil were processed and in September 2016, about 1,344 cubic yards of DU-contaminated soil were shipped off-site for disposal. Approximately 9.5 acres outside of the general excavation area are being radiologically surveyed in an effort to reduce the uncertainty regarding DU contamination in this densely wooded portion of the Firing Site.

In FY 2017, the district will continue the ongoing cleanup efforts at the site under the FUSRAP ROD.

Railcar loading operations at the Iowa Army Ammunition Plant

North St. Louis County Sites
St. Louis, Missouri

In FY 2016, the St. Louis District continued remedial activities in accordance with a 2005 ROD for the three sites that comprise the North St. Louis County Sites: the Latty Avenue Properties, which include Hazelwood Interim Storage Site/Futura Coatings Company and eight vicinity properties; the St. Louis Airport Site (SLAPS); and the SLAPS Vicinity Properties, which include Coldwater Creek and adjacent properties. The district conducted two public meetings and issued two newsletters for the St. Louis Sites. The district will continue with public meetings and newsletters in FY 2017.

Latty Avenue Properties

The Latty Avenue Properties comprise eight vicinity properties plus the Hazelwood Interim Storage Site and Futura. Early in 1966, the Continental Mining and Milling Company purchased ore residues and uranium- and radium-bearing process wastes stored at SLAPS from the MED/AEC and moved them to a storage site on Latty Avenue.

In FY 2016, the St. Louis District conducted groundwater monitoring and long-term management activities at the Latty Site. These activities will continue in FY 2017. Also in FY 2017, the St. Louis District will continue to prepare the institutional controls to address the remaining contamination beneath the buildings on the Futura property.

St. Louis Airport Site

In 1946, the MED acquired the 21.7-acre tract of land, now known as SLAPS, to store residues from uranium processing at the Mallinckrodt facility in St. Louis. Residuals from the uranium processing accumulated at SLAPS through 1957. In 1966, Continental Mining and Milling Company bought the residues for recycling and moved the residues from SLAPS to a site on Latty Avenue. Contamination containing uranium-238, radium-226, and thorium-230 remained on the property.

Remedial activities at SLAPS are complete, and the post-remedial action report was released in May 2009. Groundwater monitoring and long-term management activities began in 2010 and are ongoing. The Corps of Engineers will transfer the site back to the DOE's Office of Legacy Management when all of the North County sites are completed.

St. Louis Airport Site Vicinity Properties

The SLAPS Vicinity Properties are located in the cities of Hazelwood and Berkeley, Missouri. A 14.2-mile section of Coldwater Creek (CWC) located in North St. Louis County is a SLAPS Vicinity Property. CWC flows adjacent to SLAPS and the Latty Avenue Properties through the communities of Berkeley, Hazelwood, Florissant, Black Jack, and unincorporated St. Louis County and empties into the Missouri River. CWC flows north under Highway 270 through both residential and public recreational areas. The St. Louis District is currently sampling the CWC corridor and adjacent properties north of Highway 270. Uranium, radium, and thorium contamination at the SLAPS Vicinity Properties are linked to both SLAPS and the Latty Avenue Properties. Over time, residues migrated from other sites or were deposited as the residues were hauled along transportation routes.

Remedial activities at Duchesne Park adjacent to Coldwater Creek – North County Vicinity Property. To date over 4,400 cubic yards of contaminated material has been removed from Duchesne Park.

In FY 2016, the St. Louis District completed cleanup at St. Cin Park in Hazelwood, Missouri, and initiated remedial activities at Duchesne Park in Florissant, Missouri.

The St. Louis District completed sampling a three-mile section of CWC in the residential/commercial areas of North St. Louis County, completed sampling 20 properties in the industrial area, and issued documentation releasing five properties for beneficial use. Additional documents issued include predesign

investigation reports for one property and remedial designs for four properties. The district shipped 11,136 cubic yards of contaminated material off-site for disposal.

In FY 2017, the St. Louis District will complete the cleanup of Duchesne Park, initiate remedial activities at the six Palm Drive residential properties, and resume cleanup at the Ballfields. In addition, the district will continue sampling CWC, its vicinity properties, and two other SLAPS Vicinity Properties. The St. Louis District will also issue documentation releasing 10 vicinity properties and ship 10,000 cubic yards of contaminated material to an off-site disposal location.

St. Louis Downtown Site
St. Louis, Missouri

From 1942 until 1957, the MED and AEC contracted with Mallinckrodt Chemical Works to process uranium ore for the production of uranium metal. Residuals of the process, including spent pitchblende ore, process chemicals, radium, thorium, and uranium, were released from the Mallinckrodt Property and into the environment through handling and disposal practices.

The St. Louis District continues remedial activities in accordance with the 1998 ROD for the accessible areas at the St. Louis Downtown Site, which includes the Mallinckrodt plant and 42 vicinity properties.

Destrehan Street Excavation – Estimates show approximately 16,000 bank cubic yards of contaminated material below Destrehan Street.

In FY 2016, the St. Louis District removed 21,002 cubic yards of contaminated material and shipped it off-site for disposal. The district also finalized documents releasing three properties. Additional FY 2016 efforts consisted of the cleanup within the Mallinckrodt former Building 101 area in Plant 6 West Half. The district anticipates completing the cleanup of the former Building 101 area, beginning cleanup at Destrehan Street and the Mallinckrodt former Building 17 area inside Plant 1, and issuing documents to release three additional areas during FY 2017.

The inaccessible areas of the Downtown Site were broken into Group 1 and Group 2 property groups. The district issued a no further action ROD for the Group 1 properties in FY 2014. In FY 2017, the St. Louis District will continue working toward issuing a remedial investigation addendum focusing on the remainder of the inaccessible soils categorized as Group 2 properties.

Buffalo District

Joslyn Manufacturing and Supply Company
Fort Wayne, Indiana

Circa 1947 photo of the Joslyn Manufacturing and Supply Company

From 1943 to 1952, the Joslyn Manufacturing and Supply Company worked under government contract to temper, hot roll, quench, straighten, cool, grind, cut, and thread natural uranium billets into metal rods. The 23-acre Joslyn Site was entered into FUSRAP in FY 2009 and assigned to the Buffalo District. In FY 2014, the Buffalo District initiated project scoping for a remedial investigation. The remedial investigation contract award will occur based on the availability of FUSRAP funds nationally.

Guterl Specialty Steel
Lockport, New York

Health physicist scanning building materials at the Guterl Specialty Steel Site

From 1948 to 1956, the Simonds Saw and Steel Company, later known as the Guterl Specialty Steel Site, rolled uranium steel billets into rods under a contract with the AEC. The 70-acre site is located in Lockport, New York.

During FY 2016, the Buffalo District continued to develop a feasibility study for the site. In FY 2017, the district will complete updates to the feasibility study, complete the draft proposed plan, and begin the review cycle. The feasibility study and proposed plan are scheduled for release together in FY 2018. Groundwater monitoring continues to be conducted annually for the site.

Linde Air Products
Tonawanda, New York

Praxair, Inc., owns and operates the 135-acre Linde Site in Tonawanda, New York. From 1942 to 1946, the former Linde Air Products Division of Union Carbide processed uranium ores at this site under contract to the MED.

In FY 2015, the Buffalo District completed the site closeout report for the Linde Site. In FY 2016, the Buffalo District continued activities to prepare for the scheduled transfer of the site to the DOE's Office of Legacy Management for long-term stewardship in spring 2017.

The Tonawanda Landfill, a vicinity property to the Linde Site, is reported separately in this update.

Niagara Falls Storage Site
Lewiston, New York

The Niagara Falls Storage Site (NFSS) is a 191-acre federally owned site in Lewiston, New York. It is 19 miles northwest of Buffalo and contains a 10-acre Interim Waste Containment Structure (IWCS). The Buffalo District performs maintenance, monitoring, and environmental surveillance activities at the site to verify the IWCS remains protective of human health and the environment and continues to perform as designed.

In FY 2016, the district released the IWCS OU feasibility study and proposed plan and conducted a public meeting. The district received overwhelming public acceptance for the preferred remedy identified in the proposed plan, which was removal and off-site disposal of all materials within the IWCS. The district also initiated development of a feasibility study for the Balance of Plant and Groundwater OUs to evaluate potential remedial alternatives for all materials outside the IWCS as well as groundwater.

The district will release the IWCS OU ROD and continue to prepare the feasibility study for the Balance of Plant and Groundwater OUs in FY 2017. The district will continue to perform environmental surveillance to ensure the IWCS is performing as designed until the selected remedy is implemented. Phytoremediation will also be evaluated in FY 2017 with the Buffalo District collaborating with the Corps of Engineers' Engineer Research and Development Center to evaluate and determine the effectiveness of plants in addressing uranium-contaminated groundwater.

The Buffalo District prepared a preliminary assessment for Vicinity Property H Prime to determine if the property should be added to the site. The preliminary assessment, which was completed in early FY 2017, concludes that there is no imminent threat to human health or the environment on the property. However, surface soils, subsurface soils, concrete slabs/foundations, sediment, surface water, and groundwater may have residual impacts from past storage and processing of FUSRAP-related material on the property. The vicinity property will undergo further investigation to determine the nature and extent of FUSRAP-related material on it and to estimate the associated potential risks to human health and the environment. Work will commence based on the availability of FUSRAP funds nationally. Additionally, the district intends to prepare a preliminary assessment and perform a site inspection during FY 2017 of Vicinity Property X.

Seaway Industrial Park
Tonawanda, New York

The Seaway Site is a 93-acre commercial landfill in Tonawanda, New York, a suburb of Buffalo. Approximately 16 acres of the landfill contain radiological waste that originally came from the nearby Linde Site, which processed uranium ore for the MED. The Corps of Engineers signed a ROD for the Seaway Site in October 2009, which identified containment with limited off-site disposal as the selected remedy for the site.

In FY 2016, the Buffalo District completed excavation and off-site disposal of contaminated soil on the north side of the landfill outside of the landfill's leachate containment system. Later in FY 2016, the Buffalo District awarded a contract to continue excavation and disposal of contaminated soil on the south side perimeter of the landfill. During FY 2017, the Buffalo District will complete the excavation and off-site disposal of all contaminated soils remaining on the landfill perimeter. The landfill containment remedy is ready to start as soon as ongoing cleanup is completed at other FUSRAP sites or the funding level is increased for the national program.

Tonawanda Landfill
Tonawanda, New York

The Tonawanda Landfill is a vicinity property of the Linde Site. It is located in Tonawanda, New York, a suburb north of Buffalo, and consists of two OUs: the 55-acre Tonawanda Landfill OU and the 115-acre Mudflats OU. The site was designated into FUSRAP in 1992 when early DOE investigations around the Linde Site detected elevated levels of FUSRAP-related radionuclides in the landfill.

The Buffalo District completed work at the Mudflats OU in 2008 with a no-action ROD. The district completed preparation of an updated baseline risk assessment for the Landfill OU in FY 2012, which found that while risks to human health from potential exposure to FUSRAP-related material buried in the landfill are within acceptable limits for the current site conditions, risks could increase above acceptable limits in the future if the surface of the landfill is allowed to erode as time passes.

In FY 2015, the Buffalo District released the feasibility study and proposed plan for the Landfill OU and conducted a public meeting. The proposed plan documented the preferred alternative, which is targeted shallow removal and off-site disposal of FUSRAP-related material. In FY 2016, the Buffalo District began preparation of a ROD for the Landfill OU. It is scheduled for release in FY 2017.

Harshaw Chemical Company Site
Cleveland, Ohio

This 55-acre industrial facility is located three miles south of downtown Cleveland. From 1944 to 1959, the Harshaw Chemical Company was under contract to the MED and the AEC to produce uranium for isotopic separation and enrichment in Oak Ridge, Tennessee. The Harshaw Site is currently unused and secured by the property owner.

In FY 2015, the former uranium process building, G-1, was deconstructed by the Buffalo District to allow unobstructed investigation of underlying hydrogeologic conditions. Later in the year, remaining on-site buildings were removed by the property owner.

In FY 2016, the Buffalo District began preparation of a feasibility study addendum to incorporate results of additional groundwater investigations and initiated a proposed plan to present preferred remedial alternatives for the site.

In FY 2017, the Buffalo District will continue preparing the feasibility study addendum and proposed plan and continue annual groundwater sampling, testing, and reporting activities at the site.

Luckey Site
Luckey, Ohio

The Luckey Site, a 40-acre privately owned site 24 miles southeast of Toledo, is in the remedial design phase. From 1949 to 1958, the site was operated as a beryllium production facility under contract to the AEC, resulting in beryllium, radionuclide, and lead contamination of site soils and groundwater. The site also received scrap steel containing radioactive residues from NFSS, for potential use in magnesium production activities which were never initiated.

The Buffalo District awarded the site cleanup contract in FY 2015 and prepared the cleanup work plans in FY 2016. In FY 2017, the cleanup contractor will mobilize equipment to the site and set up necessary cleanup infrastructure, after which excavation and disposal of FUSRAP-contaminated site soils will commence.

Painesville Site
Painesville, Ohio

The Painesville Site, a 30-acre privately owned site located about 22 miles northeast of Cleveland, is currently in the project closeout phase. Although not directly involved in past MED or AEC activities, the site became contaminated with FUSRAP-related materials when scrap steel containing radioactive residues was shipped to the site from NFSS for use in other government-contracted operations.

The Buffalo District completed cleanup of site soils containing FUSRAP-related material in FY 2011. This cleanup used innovative soil-segregation technology to increase the efficiency of shipping soil above the site cleanup levels for off-site disposal and resulted in a cost savings of approximately $6 million. A total of 14,800 cubic yards of contaminated material were shipped off-site for disposal.

In FY 2014, the Buffalo District completed the site closeout report for the Painesville Site, and began preparations for the transfer of the site to the DOE's Office of Legacy Management for long-term stewardship. In FY 2016, the Buffalo District completed transfer of the Painesville Site to the DOE, making it a completed FUSRAP site. Further information on the Painesville Site may be found at http://www.lm.doe.gov/Painesville/Sites.aspx.

Superior Steel
Carnegie, Pennsylvania

The former Superior Steel Site, a 25-acre site located in Scott Township near Carnegie, Pennsylvania, was added to FUSRAP in FY 2008. Uranium metal had been processed at the site in support of the AEC's fuel-element development program from 1952 to 1957. The site was also licensed to receive thorium metal for processing and shaping from 1957 to 1958. The Buffalo District is currently in the remedial investigation phase for the site.

Radiological scanning in trench drain at Superior Steel Site

During FY 2016, the Buffalo District identified data gaps in the draft remedial investigation report, which resulted in additional sampling activities to fully identify the nature and extent of contamination on-site. In FY 2017, the draft remedial investigation report is expected to be completed, and the final report is scheduled for release in FY 2018.

Pittsburgh District

Shallow Land Disposal Area
Parks Township, Pennsylvania

In January 2002, Section 8143 of Public Law 107-117 directed the Corps of Engineers to clean up radioactive waste at the Parks Township Shallow Land Disposal Area under FUSRAP. This 44-acre site located northeast of Pittsburgh consists of 10 trenches containing wastes from a facility that processed uranium and thorium.

In FY 2016, a ROD amendment was approved; a request for proposal was issued; a new site security contract was awarded; and maintenance, monitoring, and security activities continued at the site.

In FY 2017, the project team plans to award a new cleanup contract and begin drafting planning documents. The district will continue to perform site maintenance, monitoring, and security until the new cleanup contractor mobilizes to the site.

Baltimore District

W.R. Grace at Curtis Bay Site
Baltimore, Maryland

From May 1956 through early 1957, thorium and rare earth elements were extracted from monazite sand at the site under an AEC license. This process occurred in the southwest quadrant of a 100-year-old, five-story manufacturing building (Building 23). Building 23 is still in active use by the current property owner. Building components and equipment in the southwest quadrant of Building 23 exhibited residual radiological activity remaining from the monazite sand processing. Waste materials from the processing operations (termed gangue) were disposed of on-site in an area referred to as the Radioactive Waste Disposal Area (RWDA).

In April 2008, the U.S. entered into a site-wide settlement agreement with the site owner through the District of Delaware Bankruptcy Court. The agreement states that financial liability shall be shared between the site owner and the government in a 40/60 split. The site owner has the lead to contract, manage, and direct the site cleanup according to the final ROD for Building 23 and the ROD for the RWDA, which were signed in 2005 and 2011.

In FY 2016, the project team started re-evaluation of the effectiveness of the current remedy at Building 23. This included a review of all site data collected, additional data collection, an engineering analysis, and the future utility of the building.

In FY 2017, based on the engineering review, the decision will be made to either continue with the current remedy of decontaminating Building 23 or consider selecting a different remedy, such as building demolition. Remedial action will not begin at the RWDA until the Building 23 remedial action is completed and accepted by the Corps of Engineers.

New England District

Combustion Engineering Site
Windsor, Connecticut

The Combustion Engineering Site, located in Hartford County eight miles north of Hartford, was a research, development, engineering, production, and servicing facility for nuclear fuels, systems, and services from the mid-1950s through 2000. In FY 2012, Combustion Engineering completed the cleanup of FUSRAP-related material at the site. The cleanup was performed as part of ongoing decommissioning work leading toward license termination and unrestricted release in accordance with License Termination Rule at 10 CFR Part 20, Subpart E.

In FY 2013, the New England District completed its review of the seven final status survey reports submitted by the site owner to the NRC, and the district provided comments to the NRC on the reports. The 600-acre site was released for unrestricted use, and the NRC license was terminated. In FY 2016, the district completed a final closeout report for the site. The district plans to return the site to the DOE Office of Legacy Management for long-term stewardship in FY 2017.

Shpack Landfill
Norton/Attleboro, Massachusetts

In FY 2012, the New England District completed the FUSRAP cleanup at the Shpack Landfill Site, an eight-acre abandoned domestic and industrial landfill approximately 40 miles southwest of Boston.

The district shipped a total of 50,908 cubic yards of processed waste material off-site. In FY 2013, the district demobilized from the site and completed a final status survey, which it shared with the EPA, so the responsible party could complete the CERCLA cleanup of the remainder of the property.

The remaining responsible party group work was completed in December 2013. The New England District completed a closeout report for the site in FY 2016, and the district plans to return the site to the DOE Office of Legacy Management for long-term stewardship in FY 2017.

New York District

Maywood Chemical Superfund Site
Maywood, New Jersey

This site is a combination of 92 private and government-owned properties approximately 13 miles northeast of Newark, New Jersey, in the boroughs of Maywood and Lodi and the township of Rochelle Park. It is a National Priorities List site.

Contamination at the properties resulted from rare earths and thorium processing activities conducted at the Maywood Chemical Works from the early 1900s through 1959.

Remedial excavations of a wetland on a commercial property in Maywood, New Jersey. Water management was a challenge, as evidenced by the row of portable water storage tanks in the background.

In FY 2016, the New York District cleaned up one vicinity property, 205 Main Street, which will be completed in FY 2017, and started work on Redstone Park. The district also conducted a supplemental investigation of the Stepan buildings in FY 2016. More than 44,000 cubic yards of contaminated soils were removed from the site with extensive cleanup performed in the wetlands associated with the Sears Vicinity Property.

In FY 2017, the district plans to continue cleaning up soils consistent with the soils and groundwater RODs, cleaning up commercial properties (Sears Building and 96 Parkway), and to issue long-term groundwater baseline monitoring reports to the EPA.

Middlesex Municipal Landfill
Middlesex, New Jersey

The Middlesex Municipal Landfill is a 37-acre site approximately 16 miles southwest of Newark. It consists of parcels belonging to the Borough of Middlesex and the Middlesex Presbyterian Church.

The Middlesex Municipal Landfill was operated as a landfill from approximately 1940 through 1972. The landfill was closed following the regulations at the time and maintained with a minimum cover of two feet and establishment of vegetation. Since its closure, the site has not been developed.

A 2008 radiological survey of the site identified small areas of low-level surface radiation leading the DOE to refer it to the Corps of Engineers in March 2009 for investigation under FUSRAP. The New York District conducted a preliminary assessment and site inspection in FY 2011. Based on results of the preliminary assessment and site inspection, the district recommended a remedial investigation for the site under FUSRAP. In 2014, the Middlesex Municipal Landfill was officially added to the program.

FY 2016 funding was used to complete the remedial investigation. The New York District plans to use FY 2017 funding to initiate the groundwater feasibility study.

Middlesex Sampling Plant
Middlesex, New Jersey

The Middlesex Sampling Plant (MSP) is a 9.6-acre, federally owned site in Middlesex, New Jersey. The MED established the MSP in 1943 for sampling; storage; and shipment of uranium, thorium, and beryllium ores.

MED operations ended in 1955, and the AEC later used the site for storage and performed limited sampling of thorium residues. In 1967, the AEC terminated activities at the MSP and decontaminated on-site structures to meet criteria then in effect.

From 1969 to 1979, the site served as a U.S. Marine Corps training center. In 1980, the MSP was returned to the DOE, which designated it for cleanup under FUSRAP. The MSP was used for interim storage of two piles of radioactively contaminated soils removed from vicinity properties and from the Middlesex Municipal Landfill. The Middlesex Site was added to the EPA's Superfund National Priorities List in FY 1999.

Through the end of FY 2001, the New York District has removed and disposed of the Middlesex Municipal Landfill pile and the vicinity property pile. Additionally, the district completed a remedial investigation/feasibility study/proposed plan, ROD, and remedial design for soils on the remainder of the site. Characterization of groundwater contamination is ongoing.

At the request of the EPA, the New York District commenced a supplemental bedrock groundwater investigation in FY 2014 to further delineate contamination underlying this government-owned site. FY 2016 funding was used to complete the groundwater investigation fieldwork and incorporate this information into the feasibility study report. The New York District plans to use FY 2017 funding to complete the groundwater feasibility study and initiate the proposed plan.

Colonie Site
Colonie, New York

The former 11.2-acre National Lead Industries Site, now called the Colonie Site, was used for electroplating and manufacturing various components using uranium and thorium. Radioactive materials released from the plant exhaust stacks spread to site buildings, portions of the grounds, and 56 commercial and residential vicinity properties.

In FY 2016, the New York State Department of Environmental Conservation approved a two-year groundwater monitoring report for the main site based on an FY 2010 ROD, and a remedial investigation report for the vicinity properties.

In FY 2017, the New York District plans to prepare a proposed plan and ROD for the vicinity property OU, issue a site management plan for the main site soils, prepare a five-year review of the groundwater ROD, and perform records retention in preparation for transfer back to the landowner (DOE).

Sylvania Corning Plant
Hicksville, New York

The Sylvania Corning Plant is a 9.49-acre area located in the westernmost portion of Hicksville, Long Island, approximately 30 miles east of lower Manhattan. From 1952 to 1965, the Sylvania Corning Plant had contracts with the AEC for research, development, and production primarily in support of the government's nuclear weapons program. From 1952 to 1967, a second operation concentrated on AEC-licensed work primarily for the production of reactor fuel and other reactor core components. In September 2011, the site was included in a regional groundwater listing on the National Priorities List.

FY 2016 funding was used to evaluate off-site groundwater contamination and continue stakeholder coordination. The New York District plans to use FY 2017 funding to complete a draft comprehensive site-wide remedial investigation report for regulatory review.

Philadelphia District

DuPont Chambers Works
Deepwater, New Jersey

The Philadelphia District is conducting the environmental cleanup of the 700-acre DuPont Chambers Works FUSRAP Site, located in Deepwater, New Jersey. Chambers Works is an active chemical manufacturing facility owned and operated by The Chemours Company (formerly E.I. du Pont de Nemours and Company).

From 1942 to 1947, the MED and AEC contracted with DuPont to process uranium compounds and uranium scrap to produce uranium tetrafluoride, uranium hexafluoride, and a small quantity of uranium metal.

In FY 2016, the district developed a remedial action contract proposal to address removal of the remaining contaminated material. Field cleanup activities were not performed in FY 2016. The Philadelphia District plans to use FY 2017 funding to award a new contract to complete the cleanup of the site.

Potential New Sites

The Department of Energy determines eligibility of new sites for FUSRAP and refers eligible sites to the Corps of Engineers for further evaluation. As funding becomes available, the Corps of Engineers performs a preliminary assessment, and potentially a site inspection, as well as a preliminary legal analysis of government responsibility at the referred sites. Based on the results of these studies, the Corps of Engineers may designate a site into the program for further investigation and potential action. Sites may also be added to the program through legislative action.

The DOE has identified the Staten Island Warehouse Dock in Staten Island, New York, and the Wolff-Alport Chemical Corporation site in New York City as eligible for FUSRAP designation. The Corps of Engineers is currently considering whether to include them in the program. If any of these properties are designated FUSRAP sites, they will be addressed when funding becomes available in the national program.

The *Formerly Utilized Sites Remedial Action Program Update*, EP 360-1-36, is published by the U.S. Army Corps of Engineers in accordance with U.S. House of Representatives Report 107-112, dated June 26, 2001, to accompany the Energy and Water Development Appropriations Act 2002, Public Law 107-66.

For more information, please email eugene.a.pawlik@usace.army.mil or call 202-761-7690.

All Photos: U.S. Army Corps of Engineers

Cover photos: Top - Remedial excavation at a community park in Lodi, New Jersey. The stormwater pipe was removed in sections to gain access to the underlying contaminated soil. **Middle -** Sediment sampling at Niagara Falls Storage Site. **Bottom -** A radiation safety technician performing final status survey at a commercial property in Maywood, New Jersey.

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Headquarters, U.S. Army Corps of Engineers
Attn: Public Affairs Office
441 G Street NW
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