



**US Army Corps  
of Engineers®**  
St. Louis District

## St. Louis Sites Fact Sheet

# FREQUENTLY ASKED QUESTIONS ABOUT FUSRAP



The U.S. Army Corps of Engineers (USACE), St. Louis District, is conducting a radiological cleanup program for four Missouri sites. These sites contain soils contaminated with radium, thorium, and uranium as a result of activities associated with the Manhattan Engineer District/Atomic Energy Commission (MED/AEC) during the nation's early atomic program in the 1940s and 50s.

For more than 20 years, scientists and management personnel have been investigating and cleaning the St. Louis Sites. This work is done under a federal environmental remediation program called FUSRAP.

### 1. WHAT IS FUSRAP?

The Formerly Utilized Sites Remedial Action Program (FUSRAP) is an environmental remediation program. It addresses radiological contamination generated by activities of the Manhattan Engineer District and Atomic Energy Commission (MED/AEC) during development of atomic weapons in the 1940s and 1950s.

### 2. HOW MANY SITES ARE THERE?

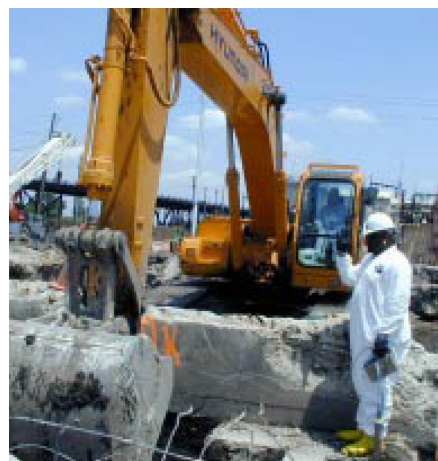
The St. Louis FUSRAP Sites consist of the St. Louis Downtown Site (SLDS) (Mallinckrodt and 37 vicinity properties [VPs]); the North St. Louis County Sites that include: the St. Louis Airport Site (SLAPS); the Latty Avenue properties (Hazelwood Interim Storage Site/Futura Coatings (HISS/Futura) and 8 Latty Avenue VPs; and SLAPS VPs that include over 148 industrial properties and Coldwater Creek from Banshee Road to the Missouri River and adjacent properties. St. Louis District is also responsible for response actions at Iowa Army Ammunition Plant and has completed response actions at the Madison, Illinois site, which has been returned to U.S. Department of Energy (DOE) for long-term stewardship.

### 3. HOW DID THE SITES BECOME CONTAMINATED?

Private companies throughout the United States under contract with the federal government performed work for the MED during World War II and for the AEC following the war. Both the MED and AEC were predecessors to the present day DOE.

From 1942 to 1957, the Mallinckrodt Chemical Plant extracted uranium and radium from high grade uranium ore at SLDS in downtown St. Louis. During that time and until 1967, radioactive process byproducts (waste residues) were stored at an area adjacent to Lambert-St. Louis Airport, what is now the SLAPS site.

Between 1966 and 1973, residues associated with the production and refinement of uranium materials were purchased by a private company, removed from SLAPS and transported by truck for storage at 9200 Latty Avenue (known as HISS since 1979) under an AEC license.



Crews removed thousands of cubic yards of soil and debris at the former Mallinckrodt buildings.

To learn more about FUSRAP, contact the FUSRAP Project Office at 314-331-8000 or email FUSRAP at [STLFUSRAP@usace.army.mil](mailto:STLFUSRAP@usace.army.mil)

Residues migrated from SLAPS (via runoff or wind onto adjacent properties and into Coldwater Creek) or were released or otherwise deposited when material was transported along haul routes. These deposits contaminated the soil and sediment at the SLAPS VPs and Latty Avenue Properties.

#### **4. WERE ANY OF THE SITES CLEANED UP IMMEDIATELY AFTER THE MED/AEC WORK WAS COMPLETED?**

Mallinckrodt decontaminated plants where MED/AEC uranium processing occurred from the late 1940s through the early 1960s. The plants were released under the guidelines in effect at the time. As radiological regulatory guidelines changed to better protect the public, it became necessary to go back and remediate the Mallinckrodt plant sites (SLDS) to the new, more protective guidelines.

#### **5. WHAT CONTAMINANTS ARE AT FUSRAP SITES?**

FUSRAP sites are generally contaminated with uranium, thorium, and radium and their associated decay products. It is important to understand that the site soils are contaminated with low-levels of residual radioactivity because the raw product with high-level radioactivity was shipped offsite at the time of processing.

#### **6. HOW DANGEROUS ARE THE ST. LOUIS FUSRAP SITES?**

Even though FUSRAP sites may contain levels of radioactivity above current regulatory guidelines, none of the sites pose an immediate health risk to the public or environment given current land uses.

Generally speaking, at St. Louis FUSRAP sites, the contamination is several inches to several feet below ground level, capped with vegetation, asphalt, or concrete and/or is in areas that are restricted from the general public.



Remedial activities at Duchesne Park are now complete.

#### **7. IF THE SITES AREN'T DANGEROUS, THEN WHY DO THEY NEED TO BE CLEANED UP?**

Although these materials are not currently a hazard, they will remain radioactive for thousands of years, and risk to exposure could increase if the use of the land were to change. Each site is remediated to a standard commensurate with foreseeable future uses for the land.

#### **8. HOW DOES A SITE BECOME A PART OF THE PROGRAM?**

Sites can be referred to FUSRAP by DOE or added legislatively by Congress.

#### **9. HOW DID FUSRAP START?**

FUSRAP was initiated in 1974 by DOE to study and take appropriate response actions at sites that have become contaminated because of work performed by private companies for the MED/AEC. The Energy and Water Development Appropriations Act for fiscal year 1998, signed into law on October 1997, transferred responsibility for the administration and execution of FUSRAP from DOE to USACE.

#### **10. WHAT ARE FUSRAP'S OBJECTIVES?**

The objectives of FUSRAP are to:

- Evaluate sites that supported MED/AEC nuclear work and determine if there is a threat release that requires a response to protect human health and the environment.
- Remediate or apply controls to these sites so that they meet current guidelines.
- Dispose of or stabilize in a radiologically and environmentally acceptable manner contamination that exceeds guidelines or causes an unacceptable level of risk.

- Complete all work in a manner consistent with appropriate federal laws and regulations and state and local environmental land use requirements (to the extent permitted by federal law).

## 11. DOES USACE HAVE TO FOLLOW ANY RULES WHEN CLEANING UP SITES?

Every step of the FUSRAP cleanup process is regulated by a number of federal and state laws and their implementing regulations. Chief among these is the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

CERCLA consists of a series of very specific steps and activities that must be performed to ensure a thorough cleanup process. It chronicles actions taken at a site from its initial site designation into the program to its closeout.

It is also typical for many FUSRAP sites to be subject to multiple laws, depending on the type and extent of contamination at the site. Other laws may include the Resource Conservation and Recovery Act, the Toxic Substances Control Act, the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, the Atomic Energy Act, the Uranium Mill Tailing Radiation Control Act, and state and local laws.

Public participation is an important component of the CERCLA process, and USACE encourages the public to be part of the process and coordinates with the public and regulators.

## 12. HOW DOES FUSRAP WORK?

FUSRAP sites undergo several steps in the CERCLA process:

- **Preliminary Assessment/Site Inspection:** Collects and reviews information about the site. If it appears there may be contamination on site, a **site investigation** with sampling is performed to determine whether contamination is present on site.
- **Remedial Investigation/Feasibility Study:** Identifies the contamination at the site and its exact location. The **remedial investigation** (RI) will include a risk assessment, which is the science of estimating potential risks to human health and the environment posed by contaminants. Within FUSRAP, risk assessment information helps determine what actions should be taken to clean up the site.

The **feasibility study** (FS) develops and evaluates effectiveness, challenges, and cost of remedial alternatives.

- **Proposed Plan:** Summarize those already conducted FS evaluations and present the “preferred alternative” and explain why it was selected as the preferred alternative. The **proposed plan** document is made publicly available (along with the RI and FS) and a public meeting is held to present the proposed plan.
- **Record of Decision:** The final remedy decision after careful consideration of the public comments. If the selected remedy includes remediation, a remedial design follows a **record of decision** and includes preparation of technical drawings and specifications that direct how the remediation will be conducted. Special care is taken to ensure the safety of workers, people on site (where applicable), and surrounding neighbors. Remediation begins after the remedial design is complete. This phase involves site preparation and construction activities. When these activities are completed, testing is conducted to ensure that remediation goals for the site have been met.



SLDS required remediating 37 contaminated sites.



SLAPS required remediating 10 contaminated sites.



Remedial action under the North County ROD was completed at HISS and Futura in 2013.



### **13. WHAT STEPS ARE TAKEN TO PROTECT PEOPLE DURING REMEDIATION AT A SITE?**

If remediation is the selected remedy for a site, a combination of engineering, administrative, and personal protective equipment controls are put in place to ensure the safety of site workers, people on site (where applicable), and surrounding neighbors. Perimeter air monitors are placed around an excavation site with samples taken and data evaluated on a daily basis. Engineering controls for dust management (such as watering down the material for excavation) are also used. In addition, USACE follows specific safety procedures to segregate the area of excavation, placing warning signs and safety precautions to ensure contamination is not going offsite during transportation of the contaminated materials from the excavation to the loadout area.

### **14. HOW IS FUSRAP ORGANIZED?**

Administrative and financial management of FUSRAP activities is the responsibility of USACE Headquarters in Washington, DC. Headquarters then delegates work to the USACE Divisions, which in the case of the St. Louis District is the Mississippi Valley Division. Execution of the St. Louis District FUSRAP projects is done with a team approach. The team members include experts from the St. Louis District. Most site investigations and remedial action are done by contractors under the supervision of USACE with USACE ensuring that all FUSRAP activities comply with CERCLA requirements.

The St. Louis District executes FUSRAP as Lead Federal Agency in coordination with the USEPA Region 7 and the Missouri Department of Natural Resources.

### **15. WHAT KINDS OF EXPERTS COMPRISE EACH TEAM WITHIN THE ST. LOUIS DISTRICT?**

Each project involves several experts dedicated to ensure that human health and the environment are protected. The core project team includes a program manager, project manager, project engineer, design engineer, health physicist, and an industrial hygienist.

In addition, the St. Louis FUSRAP team also includes support from chemists, biologists, the public affairs office, office of counsel, real estate office, and resource management, just to name a few.

### **16. WHERE DOES THE CONTAMINATED MATERIAL FROM THE ST. LOUIS SITES GO?**

The contaminated material is transported by covered rail cars to an out-of-state, federally licensed disposal facility in Idaho. The Idaho facility is specifically licensed to receive low-level radioactive waste.

### **17. IS THE SOURCE OF CONTAMINATION GONE?**

The two primary sources of contamination in North St. Louis County Sites are SLAPS and the Latty Avenue Properties. Remediation at SLAPS was completed in 2007. At HISS, piles were removed in 2001 and 2002. Remediation of the in-situ soil contamination at the Latty Avenue Properties was completed in 2013.

### **18. HOW DOES ST. LOUIS FUSRAP KNOW THAT COLDWATER CREEK IS NOT BEING RE-CONTAMINATED DURING REMEDIAL ACTIVITIES?**

FUSRAP has performed long-term monitoring bi-annually since 1998. Originally, there were six sediment and water locations in Coldwater Creek that were sampled. Recently USACE added two more sampling locations north of I-270. The data shows no evidence that contamination has been moving into the creek. These results can be found in the Annual Environmental Monitoring Data/Analysis Reports on the FUSRAP website at <http://bit.ly/FUSRAPstl>.