

# The St. Louis Sites

Formerly Utilized Sites Remedial Action Program • Summer 2016

(314) 331-8000

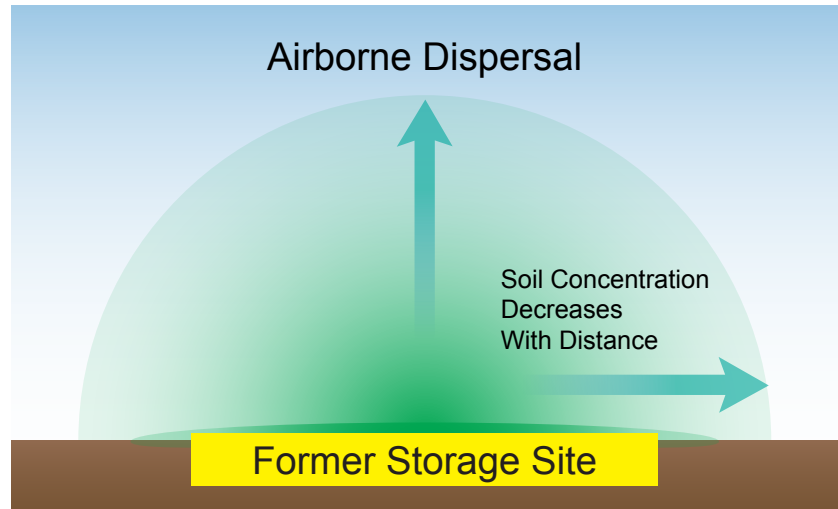
www.mvs.usace.army.mil

## Air Dispersal

North St. Louis County historic storage sites include the St. Louis Airport Site (SLAPS) and Hazelwood Interim Storage Site (HISS). SLAPS stored uranium ore process wastes from 1946 to 2006, and HISS stored similar waste from 1966 to 2011. After years of monitoring and cleanup, the SLAPS and HISS piles are now completely removed. The sites are in compliance with state and federal cleanup guidelines.

USACE has modeled potential air dispersal of soil from the historic storage sites to off-site locations. Scientists used actual soil sampling data from the two sites in a computer program called RESRAD. RESRAD stands for RESidual RADioactivity. RESRAD produces a simulated model that shows the pathways radionuclides use to move through the environment and the risk of them coming into contact with people.

Because thorium-230 is the most common contaminant at SLAPS and HISS, USACE used it in the model. Thorium is a heavy element found in nearly all soils worldwide and is naturally radioactive. Thorium, like lead or uranium, is heavy, but thorium dust can move. USACE used the concentration of thorium-230 in soil samples taken to calculate movement and potential health risks.



*Precipitation and gravity drop contaminants from the air to the ground.*

Modeling showed that thorium concentrations in the air decreased as air moved away from the sites and that almost all of the thorium dropped back down to the ground within a few hundred feet of the sites.

### Accounting for extreme weather

USACE modeled results using this extreme worst case scenario:

- very dusty, windy conditions for entire duration of waste storage at SLAPS and HISS.
- highest contamination sample values found onsite.

USACE found that the potential impact to surrounding areas from the air dispersion of contaminants previously stored on SLAPS and HISS *did not play* a significant role in contaminant movement leading to human exposure.

North County has had some short-term, severe weather conditions. For example, the F1 tornado in 2004 had wind speeds up to 112 mph. Actual air monitoring being performed during this tornado showed no significant airborne contaminants migrated off the sites during this event.

## Upcoming Events

**Information Releases:** *Winter Newsletter - 2017*

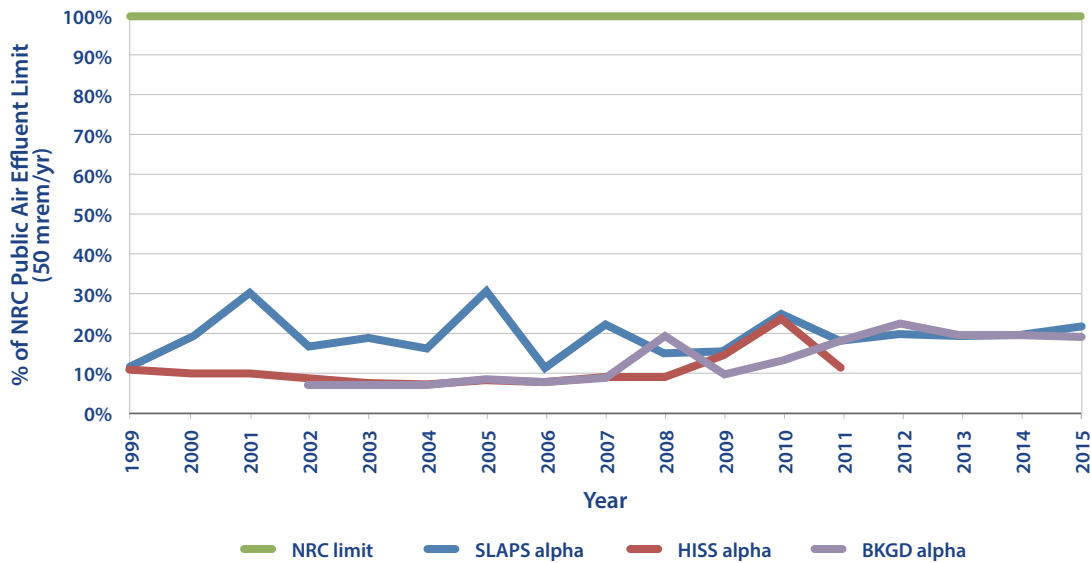
*This newsletter is issued twice a year.*

**Upcoming Meetings:** *Public Meeting - June 29, 2016*

*6:00 - 8:00 p.m. at James J. Eagan Community Center, Florissant Civic Center Gym; 1 James J. Eagan Drive, Florissant.*



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Measured concentration of contaminants as alpha particle radiation at the SLAPS and HISS fenceline for 16 years is shown in this graph. The site values are well below the NRC public safety limit and are comparable to background.

## St. Louis Formerly Utilized Sites Remedial Action Program Activities

### St. Louis Downtown Sites

#### Recent Remedial Action Construction Activities

USACE continues remedial construction activities at the St. Louis Downtown Sites (SLDS) at the Mallinckrodt LLC Plant 6 area within the former Building 101 footprint. Building 101, once the Bulk Shipping Center, was removed in 2012. To date, USACE has removed approximately 52,000 cubic yards of contaminated soils

and has backfilled much of the eastern and northern portions of Building 101 area. Construction now includes installing sheet pile shoring modifications required for deeper excavations along the western portion of Building 101. Excavation activities, final grading, and restoration of the remediated areas will be completed soon.

In the coming months, USACE will begin remedial activities construction at Destrehan Street East between Plants 6 and 7 at SLDS. Preconstruction activities have already begun.

The planned Destrehan Street remedial activities will proceed from east to west in four linear sections and will result in the removal and disposal of approximately 16,000 cubic yards of contaminated soil. USACE projects completion of RA for Destrehan Street East, including the required utility and street restorations, in about a year.

#### North County Vicinity Properties

USACE completed remedial activities at St. Cin Park in the City of Hazelwood in February 2016. Cleanup required removing approximately 3,400 cubic yards of contaminated material. Restoration activities at the park are ongoing. USACE recently completed the construction of a basketball court at the site.

### Keeping in Touch

**Mailing Lists** - To receive newsletters and other printed communications, sign up for our mailing list any time.

**Phone:** (314) 331-8000  
**Mail:** 8945 Latty Avenue, Berkeley, MO 63134  
**Fax:** (314) 260-3941

**Homepage** - To reach our site, go to <http://bit.ly/FUSRAPstl>

If you have any suggestions, questions, or comments, please contact us.



*Restoration at St. Cin Park (including turf establishment, as shown) is in progress this summer.*

Remedial activities at Duchesne Park in the City of Florissant started in March 2016. To date, USACE has removed over 1,500 cubic yards of contaminated material. USACE tentatively expects to complete Duchesne Park in August 2016.

Sampling at CWC from Frost Avenue to St. Denis Bridge is almost completed. USACE is currently preparing documents to release the sampling data from this stretch of the creek. When the document is complete, it will be posted on the FUSRAP website. (<http://bit.ly/FUSRAPstl>)

### **MARSSIM-based Sampling**

Four federal U.S. agencies (Department of Defense, Department of Energy, Environmental Protection Agency, and Nuclear Regulatory Commission) created a manual that provides detailed guidance on how to demonstrate that a site is in compliance with a radiation dose- or risk-based regulation. It is called the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). MARSSIM provides a standardized approach to test a radiologically contaminated site. USACE uses the MARSSIM approach to perform final status surveys to ensure that St. Louis FUSRAP cleanup goals are met.

USACE follows MARSSIM in the sampling campaign currently taking place on the SLAPS VPs, particularly Coldwater Creek. Engineers and scientists use all available resources to carry out the Radiation Survey and Site Investigation, which includes scoping, characterization, remedial action support, and final status

surveys. While each type of survey is vital to meeting established goals, the scoping and characterization surveys are of particular interest to St. Louis FUSRAP because of the amount of time and efforts required to plan and execute this stage of the process.

Establishing a strategic sampling plan includes creating a gridded map that USACE uses to systematically evaluate an area of land. MARSSIM guidance helps to standardize this process by providing key points of emphasis to consider when classifying a particular area.

A full evaluation, however, requires that developers take additional factors into account in order to focus the biased sampling. USACE studies areas of concern and plans additional samples located specifically to evaluate areas with a higher contamination potential. Examples include low-lying areas adjacent to the creek and areas of high sediment deposition.

Consistent use of this process allows USACE to produce detailed plans that can be used for efficient collection of data. Some sampling efforts literally require collecting hundreds, even thousands, of samples in order to gain full knowledge about a particular area. This knowledge, coupled with a consistent approach to evaluating risk, provides sufficient information for USACE to make evaluations based on established goals.

Currently, the MARSSIM-based approach is being used to perform sampling and other fieldwork. It is also being used during the strategic planning for the next phases of evaluation.



*To date, USACE removed over 1,500 cubic yard of contaminated material from Duchesne Park.*

## Educational Information

### Q: What is a Picocurie?

A: The *curie* is a standard measure for the intensity of radioactivity contained in a sample of radioactive material. The basis for the *curie* is the radioactivity of one gram of radium. A *picocurie* is one trillionth of a curie.

To put the relative size of one trillionth into perspective, consider that if the Earth were reduced to one trillionth of its diameter, the “picoEarth” would be smaller in diameter than a speck of dust. In fact, it would be six times smaller than the thickness of a human hair.

Obtaining the most accurate information is critical to the mission of FUSRAP. Therefore, laboratory data are reported in either picocuries per gram (pCi/g) or picocuries per liter (pCi/L) for soil and water, respectively. This allows for even comparison with FUSRAP remediation goals.

Millicurie	=	1/1,000 (one thousandth) of a curie
Microcurie	=	1/1,000,000 (one millionth) of a curie
Nanocurie	=	1/1,000,000,000 (one billionth) of a curie
Picocurie	=	1/1,000,000,000,000 (one trillionth) of a curie.

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