

EXECUTIVE SUMMARY

As the lead agency for the Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis Sites (SLS), the U. S. Army Corps of Engineers, St. Louis District (USACE) conducted a five-year review of the response actions conducted at the SLS pursuant to Section 121 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). USACE is conducting these response actions pursuant to CERCLA and the NCP under the legislative authority contained in the Energy and Water Development Appropriations Act for Fiscal Year 2000 (FY00), Public Law 106-60, §611 (HR 2605).

The SLS consists of two locations designated as the St. Louis Downtown Site (SLDS) and the North St. Louis County sites that contain radiological contamination resulting from previous Manhattan Engineering District/Atomic Energy Commission (MED/AEC) operations. The triggering action for the five-year review was September 8, 1998, the day when field operations for the remedial actions at the SLDS began.

The SLDS is comprised of the Mallinckrodt, Inc. (MI) property and the 34 surrounding vicinity properties. This site is located near the Mississippi River, north of downtown St. Louis, Missouri. The selected remedy presented in the 1998 SLDS Record of Decision (ROD) requires the excavation and disposal of radiological and chemical contamination in surface and subsurface accessible soil resulting from MED/AEC processing activities. The selected remedy also includes monitoring of the Mississippi Alluvial Aquifer.

The following table lists the SLDS remedial action covered by the period of this report (September 1998 through August 2003):

Table ES-1. St. Louis Downtown Site Remedial Action Summary

Loc.	Property	Start	Complete	CY Removed
DT-2	City Property Vicinity Property	October 1998	July 1999	4,260
MI	Plant 2	October 1998	August 2000	9,660
MI	Plant 1	July 2000	March 2002	2,490
DT-7	Midwest Waste Vicinity Property	May 2001	February 2003	3,910
MI	Plant 6 East Half (EH) and East (E)	November 2000	July 2003	18,880
DT-6	Heintz Steel Vicinity Property	April 2003	In Progress	1,660
MI	Plant 7E	July 2003	In Progress	1,775
Total Volume =				42,635

CY = cubic yards (In-Situ)

Although no soil was remediated at the Archer Daniels Midland (ADM) Vicinity Property (VP) (DT-1), a final status survey was performed that indicated the residual radioactivity was below the SLDS ROD remediation goals. Based on this finding, the property was released without radiological restrictions.

For the SLDS, a Ground-Water Remedial Action Alternative Assessment (GRAAA) was initiated because concentrations of arsenic and uranium in ground-water samples collected from the Mississippi Alluvial Aquifer exceeded investigative limits (ILs) established in the SLDS

ROD. The conclusion of Phase 1 of the GRAAA (assessment) was that Phase 2 of the GRAAA (investigation) should be conducted (USACE 2003a).

The North St. Louis County sites are located near the Lambert-St. Louis International Airport in St. Louis County, Missouri and are composed of the following properties:

- St. Louis Airport Site (SLAPS);
- Latty Avenue Properties, including the Hazelwood Interim Storage Site and Futura Coatings (HISS/Futura), and eight vicinity properties; and
- SLAPS VPs, consisting of approximately 78 properties between the SLAPS, the HISS, Coldwater Creek and the properties along Coldwater Creek.

Several removal actions have been implemented at the North St. Louis County sites. These removal actions were evaluated in Engineering Evaluation/Cost Analyses (EE/CA) documents and subsequently were authorized by Action Memoranda. Removal actions at the SLAPS were evaluated and authorized in accordance with the following EE/CAs and Action Memoranda:

- *St. Louis Airport Site (SLAPS) Interim Action Engineering Evaluation/Cost Analysis (EE/CA) and SLAPS Action Memorandum for the Removal of Radioactively Contaminated Material (DOE 1997a and 1997b).*
- *Engineering Evaluation/Cost Analysis (EE/CA) and Responsiveness Summary for the St. Louis Airport Site (SLAPS) and Action Memorandum (USACE 1999a).*

The following table summarizes the removal actions conducted at the SLAPS:

Table ES-2. SLAPS Removal Action Summary

Designation	Start	Complete	CY Removed
West End – Sedimentation Basin	September 1998	May 1999	10,530
East End	October 1998	May 2003	65,120
Radium Pits	March 2000	October 2000	36,910
Phase 1	December 2001	May 2003	74,670
Phases 2 and 3	December 2002	In Progress	24,630
Total Volume =			211,860

CY = cubic yards (In-Situ)

Removal actions for the SLAPS VPs were evaluated in the Engineering Evaluation/Cost Analysis-Environmental Assessment for the Proposed Decontamination of Properties in the Vicinity of the Hazelwood Interim Storage Site (DOE 1992), and approved in a subsequent Action Memorandum (DOE 1995).

The removal action at the HISS was evaluated in the Engineering Evaluation/Cost Analysis (EE/CA) for the Hazelwood Interim Storage Site (HISS) (USACE 1998a), and approved in the Action Memorandum (USACE 1998b). A major accomplishment during the reporting period (September 1998 through August 2003) was the removal of the waste material stockpiled at the HISS and VP-2(L), as summarized in the following table:

Table ES-3. HISS and VP-2(L) Removal Action Summary

Stockpile Designation	Start	Complete	CY Removed
East Piles 1 and 2	April 2000	June 2000	6,880
Railroad Spur Spoil Piles A and B	March 2000	June 2000	5,590
Supplemental Pile	September 2000	October 2000	4,710
Main Pile – Northern Portion	November 2000	January 2001	4,440
Main Pile – Phase 1 – South Half	March 2001	May 2001	11,950
Main Pile – Phase 2 – North Half	September 2001	October 2001	5,905
Total Volume =			39,475

CY = cubic yards

This five-year review comes at a time when site response actions are being implemented and construction is ongoing. This review, therefore, is not typical of the reviews that will be conducted over the long-term management period. The typical long-term management five-year review process is designed to examine remedies that are in place. In the future, after construction completion, five-year review reports will examine land use, institutional control monitoring and enforcement, long-term monitoring, and other long-term management activities.

The assessment of this five-year review determined that the remedial action implemented at the SLDS is in accordance with the requirements of the SLDS ROD. Likewise, this five-year review found that the North St. Louis County sites removal actions are being conducted in accordance with applicable Action Memoranda.

The response actions implemented to date at the SLDS and the North St. Louis County sites are functioning as designed and have been found to be protective of human health and the environment. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

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Five-Year Review Summary Form

<i>SITE IDENTIFICATION</i>		
Site name: Formerly Utilized Sites Remedial Action Program (FUSRAP) - St. Louis Sites (SLS)		
EPA ID: MOD980633176		
Region: VII	State: MO	City/County: St. Louis
<i>SITE STATUS</i>		
NPL status: SLAPS, HISS and Futura Coatings (HISS/Futura)		
Remediation status: Operating at the SLDS. Removal operations ongoing at North St. Louis County sites.		
Multiple OUs? YES	Construction completion date: Not applicable	
Has site been put into reuse?		
The SLDS, Futura Coatings, and various Latty Avenue properties and the SLAPS VPs have functioning businesses. The City Property Vicinity Property (DT-2) and Mallinckrodt (MI) Plant 2 have been returned to their respective owners for reuse.		
<i>REVIEW STATUS</i>		
Lead agency: U.S. Army Corps of Engineers (USACE)		
Author name: USACE, St. Louis District Office (USACE)		
Author title: USACE, St. Louis District Office	Author affiliation: USACE, St. Louis District	
Review period: 09/08/1998 to 08/31/03		
Date(s) of site inspection:		
North St. Louis County sites: April 8 – 10, 2003		
SLDS: May 8 – 9, 2003		
Type of review:		
<u>SLDS-Statutory:</u> The five-year review of the Accessible Soil and Ground-Water OU of the SLDS is being conducted pursuant to statute because the remedial action at this OU is a post-SARA remedial action that, when complete, will leave hazardous substances, pollutants, or contaminants on-site above levels that allow for unlimited use and unrestricted exposure.		
<u>North St. Louis County sites (SLAPS, HISS/Latty, SLAPS VPs) - Policy:</u> The five-year review of the North St. Louis County sites is being conducted as a matter of USEPA policy because a removal action is taking place at a site that is on the National Priorities List.		
Review number: 1 (first)		
Triggering action: Commencement of USACE field operations at the SLDS.		
Triggering action date: 09/08/1998		
Due date (five years after triggering action date): 09/08/2003		

Note: "OU" refers to operable unit.

Five-Year Review Summary Form (Cont'd.)

Issues:

St. Louis Downtown Site

Residual radioactivity concentrations in the St. Louis Downtown Site (SLDS) inaccessible soil: Radionuclides may remain in the SLDS inaccessible soil at concentrations above levels that allow for unlimited use and unrestricted exposure. USACE is currently developing the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) documentation necessary to address inaccessible soil at the SLDS. A Long-Term Stewardship Plan will be prepared to document processes and procedures with respect to requirements under CERCLA.

North St. Louis County Sites

Thin cover material at the Hazelwood Interim Storage Site (HISS): The cover material (soil) at the HISS is seeded several times per year; however, site drainage patterns appear to be impeding the establishment of vegetative cover. Thin vegetative cover could result in erosion of the soil cover by surface water and wind. However, even with total loss of the soil cover, the rock and protective geofabric under the soil cover would prevent further erosion at the HISS.

Recommendations and Follow-Up Actions:

St. Louis Downtown Site

USACE is currently developing the CERCLA documentation necessary to address inaccessible soil at the SLDS. A Long-Term Stewardship Plan will be prepared to document processes and procedures with respect to requirements under CERCLA.

North St. Louis County Sites

USACE will continue to monitor the site to ensure that erosion does not result in an off-site discharge. Any area that is determined by USACE to be impacted by erosion will be covered (e.g., seeded, crushed rock, geomembrane, clean soil) to prevent migration. USACE continues efforts to establish vegetation as a means of preventing erosion of the soil cover by surface water and wind.

Five-Year Review Summary Form (Cont'd.)

Protectiveness Statement(s):

St. Louis Downtown Site

The remedy being implemented at the SLDS Operable unit is expected to be protective of human health and the environment upon attainment of the cleanup goals established in the ROD. In the interim, exposures that could result in unacceptable risks are being controlled through access controls and work place management practices. Some areas with soil contamination deeper than four feet and some areas with contamination under permanent structures will be managed in place using institutional controls to limit use. Long-term ground-water monitoring is being used to confirm that the remedy is protective of the alluvial aquifer.

North St. Louis County Sites

The removal actions being implemented at the North St. Louis County sites operable unit are expected to be protective of human health and the environment upon attainment of the soil cleanup goals established in the EE/CAs. In the interim, exposures that could result in unacceptable risks are being controlled through access controls, surveillances and maintenance, and coordination with property owners and utility companies. In May 2003, the USACE published a Proposed Plan for remedial action designed to address all remaining contamination at the North St. Louis County Sites. Public comment has been received. A ROD is currently under development and will be made available upon finalization.

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