

# **ST LOUIS ORDNANCE PLANT**

Army Cleanup Program

Installation Action Plan Final

June 2024

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## STATEMENT OF PURPOSE

The Installation Action Plan (IAP) provides evidence that the Army is firmly committed to expeditious identification and cleanup of environmental contamination, and that the installation has a credible, organized program to carry out that commitment. The IAP provides an outline of the total multi-year environmental cleanup program for each site with ongoing or future planned restoration activity and includes the (1) environmental restoration requirements, (2) the rationale for the selected technical approach, and (3) foundation to develop corresponding financial needs for each cleanup site.

## **INSTALLATION OVERVIEW**

**Installation Name:** ST LOUIS ORDNANCE PLANT

**Installation City:** ST. LOUIS

**Installation County:** ST. LOUIS

**Installation State:** MISSOURI

**Regulatory Participation - Federal:** N/A

**Regulatory Participation - State:** MISSOURI DEPARTMENT OF NATURAL RESOURCES (MoDNR)

## ACRONYMS

Acronym	Definition
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
COC	Chemicals of Concern
CRL	Cleanup Restoration & Liabilities
DD	Decision Document
ENV	Environmental
FS	Feasibility Study
FYR	Five-Year Review
IAP	Installation Action Plan
ID	Identification
IR	Installation Restoration
IRA	Interim Remedial Action
LDB	Large-Diameter Borings
LTM	Long-Term Management
LUC	Land Use Control
MoDNR	Missouri Department of Natural Resources
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
MW	Monitoring Well
NPL	National Priorities List
PA	Preliminary Assessment
PCB	polychlorinated biphenyls
PCE	tetrachloroethylene
PR	Periodic Review
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SC	Site Closeout
SI	Site Inspection
SLOP	St. Louis Ordnance Plant
TAPP	Technical Assistance for Public Participation
USACE	US Army Corp of Engineers

Acronym	Definition
USARC	US Army Reserve Center
UST	Underground Storage Tank
UU/UE	Unlimited Use/Unrestricted Exposure
VOC	Volatile Organic Compounds

## PHASE TRANSLATION TABLE

CERCLA Phase	RCRA Phase	RCRA UST Phase
Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)	Initial Site Characterization (ISC)
Site Inspection (SI)	Confirmation Sampling (CS)	Investigation (INV)
Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
Remedial Design (RD)	Design (DES)	Design (DES)
Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
Remedial Action (Operations) (RA(O))	Corrective Measures Implementation (Operations) (CMI(O))	Implementation (Operations) (IMP(O))
Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)

## **PROGRAM SUMMARY**

**Number of Open Sites with Response Complete/Total Open IR Sites: 0/1**

**Number of Open Sites with Response Complete/Total Open MR Sites: 0/0**

**Number of Open Sites with Response Complete/Total Open CC Sites: 0/0**



## SITE-LEVEL INFORMATION

## 1805A.1001\_SLOP-01\_Former Hanley Area - SLOP

**Env Site ID:** SLOP-01

**Cleanup Site:** Former Hanley Area - SLOP

**Alias:** SLOP-01

**Regulatory Driver:** CERCLA

**RIP Date:** 7/15/2012

**RC Date:** 9/30/2054

**RC Reason:** Not assigned

**SC Date:** 9/30/2054

**Program:** ENV Restoration, Army

**Subprogram:** IR

**NPL Status:** No

**Hazardous Ranking Score:** 0

**RRSE:**

**MRSPP:** N/A

Phase	Start	End
PA:	1/31/1979	6/30/1981
SI:	2/28/1998	10/31/2001
RI/FS:	10/15/2001	7/15/2010
RD:	10/15/2009	9/15/2011
IRA:	1/31/1979	9/30/2020
RA(C):	2/15/2012	7/15/2012
RA(O):	7/15/2012	9/30/2054
LTM:	--	--

**Site Narrative:** The Hanley Area of the former St. Louis Ordnance Plant (SLOP) is adjacent to the MG Lief F. Sverdrup US Army Reserve Center (USARC) in St. Louis, Missouri. The 88th Readiness Division Army Reserve owns the Sverdrup ARC (Facility ID MO028/Site Code 29967) and the Hanley Area of the former SLOP (St. Louis #4/ORD Plant; Facility ID MO030/Site Code 29955). From 1941 to 1945, the SLOP operated solely as a small arms ammunition production facility. The Hanley Area of the former SLOP is on a relatively flat terrace and includes a steep slope down to Goodfellow Boulevard along the east side. A series of warehouse buildings, bunkers, and related buildings were located on the flat portion. Between 2004 and 2007, buildings and bunkers at the site were demolished by an 89th Regional Readiness Command (RRC) contractor. The site contains several underground rooms and tunnels for service utilities, an underground wastewater collection system, and a stormwater collection system. Buildings 219G, 219D, 219A, and a small garage are the only buildings that remain in the Hanley Area of the former SLOP. A preliminary assessment (PA)/Site Inspection (SI) was completed in October 2001. Between FY05 and FY07, the Kansas City District US Army Corp of Engineers (USACE) performed additional soil and groundwater sampling for metals, polychlorinated biphenyls (PCBs), and volatile organic compounds (VOCs) to fill data gaps at the site. The RI was completed in September 2009, the feasibility study (FS) was completed in July 2010, the proposed plan (PP) was completed in November 2010, and the decision document (DD) was completed in September 2011. Remedial actions occurred at the site in early 2012. They consisted of removing about 324 tons of soils contaminated with arsenic, lead, thallium, and PCBs, and soil-mixing at the northern end of the site to reduce tetrachloroethylene (PCE) concentrations in groundwater at Plume A. The DD Amendment dated July 2023 changes several items of the Selected Remedy. These changes include a groundwater remedy near a monitoring well (MW) MW-130/MW-110 in an offsite location in Plume A to address construction worker exposure to contaminated groundwater; An update of the groundwater monitoring program; a change in the scope of LUCs to address future potential onsite VI risk; vapor intrusion mitigation at an offsite residential location. Groundwater monitoring and land use controls are the remedial alternatives used at Plume C, where groundwater at the site's north end is contaminated with carbon tetrachloride. The long-term

management (LTM)/land use control (LUC) implementation plan and interim remedial action completion report were completed in September 2012. VOC concentrations in the groundwater have been reduced following soil mixing at Plume A/B; however, the area of VOC reduction appears to be restricted to the approximate soil mixing area. VOC concentrations in the groundwater immediately downgradient of the soil mixing area remain above remedial goals, and concentrations of cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene at MW-130 (MW-130 replaced the damaged MW-110) have been steady or increasing. MW-130 is located off-post on Stratford Avenue. Cleanup and Exit Strategy - The Army amended the OU-1 DD in 2023 to address offsite in-situ groundwater treatment near MW-130, offsite vapor mitigation, modified on-site land use controls, continued on-site and offsite groundwater monitoring, and five-year reviews (FYR). FYRs will be performed if hazardous substances remain at the site at concentrations that do not allow unlimited use and unrestricted exposure. The FYRs would be terminated once chemicals of concern (COCs) are at or below the remediation goals, and monitoring confirms that no unacceptable risks are posed by Plume C. Current and future land use is industrial.

## SITE SUMMARY

## SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
1805A.1002	SLOP-02_ FORMER BUILDING 227T	12/15/2006
1805A.1003	SLOP-03_ SEWER LINES	8/31/1979
1805A.1004	SLOP-04_ FMR MAGAZINE SERIES 227	12/15/2006
1805A.1005	SLOP-05_ POWDER WELLS(#218C & 227/228 SER	7/15/2012
1805A.1006	SLOP-06_ FMR BUILDING 236	12/15/1989
1805A.1007	SLOP-07_ FMR BUILDING SERIES 218(A-C)	12/15/2004
1805A.1008	SLOP-08_ CONTAMINATED POWDER WELLS(2),BLD	7/15/2012
1805A.1009	SLOP-09_ FMR PROCESS BDLG(219A,D,G)	12/15/1989
1805A.1010	SLOP-10_ FMR MAGAZINES(219 FAND 219J)	12/15/2006
1805A.1011	SLOP-11_ FMR MAGAZINES(219 B,C,&H)	12/15/2006
1805A.1012	SLOP-12_ FMR MAGAZINES(219E)	12/15/2006
1805A.1013	SLOP-13_ FMR BLDG. 220 LAB BUILDING	3/15/2007
1805A.1014	SLOP-14_ FMR 226 SERIES MAGAZINES	8/31/1979
1805A.1015	SLOP-15_ FMR 228 SERIES MAGAZINES	12/15/2006
1805A.1016	SLOP-16_ FMR 229 SERIES MAGAZINES	8/31/1979
1805A.1017	SLOP-17_ FMR POWDER WELL(6,FMR.226&228 SE	7/15/2012
1805A.1018	CC-SLOP-18_ OU-2 VAPOR INTRUSION PATHWAY	6/30/2020

## COMMUNITY INVOLVEMENT

<b>Community Involvement Plan (Date Last Reviewed):</b>	06/15/2013
<b>Technical Review Committee Establishment Date:</b>	N/A
<b>Restoration Advisory Board (RAB) Establishment Date:</b>	N/A
<b>RAB Adjournment Date:</b>	N/A
<b>RAB Adjournment Reason:</b>	N/A
<b>Reasons for Not Establishing RAB:</b>	The community has expressed no sufficient sustained interest in a RAB.
<b>RAB Date of Solicitation from Community:</b>	03/12/2023
<b>RAB Results of Solicitation:</b>	No comments were received.
<b>Current Technical Assistance for Public Participation (TAPP):</b>	N/A
<b>TAPP Title:</b>	N/A
<b>Potential TAPP:</b>	N/A
<b>Administrative Record Location:</b>	88TH RD HEADQUARTERS- 60 SOUTH O STREET, FORT MCCOY, WISCONSIN 54656
<b>Information Repository Location:</b>	St Louis Public Library - 1301 Olive Street, St. Louis, MO 63103

**FIVE-YEAR / PERIODIC REVIEW SUMMARY**

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	FYR	06/01/2021	12/01/2021	Complete actions through the USACE/USAEC contract.	Actions needed for a remedy to be protective in the long term include revision of groundwater RGs and DD amendment, revision of LUCs, revision of groundwater RAO.	Remedy remains protective of human health and the environment.
Planned	FYR	06/01/2026	12/01/2026	N/A	N/A	N/A