FY2015

IOWA ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program

Installation Action Plan

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the Iowa Army Ammunition Plant (IAAAP), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AEDB-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database - Restoration
AMC	Army Materiel Command
AOC	Area of Concern
bgs	below ground surface
CAMU	Corrective Action Management Unit
CC	Compliance-related Cleanup
CCL	Contaminated Clothing Laundry
CEA	Cap Extension Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI (C)	Corrective Measures Implementation (Construction)
CMI (O)	Corrective Measures Implementation (Operation)
CMS	Corrective Measures Study
CQCP	Contractor Quality Control Plan
CR	Compliance Restoration
CTT	Closed, Transferred or Transferring
CWP	Contaminated Waste Processor
cy	cubic yard
DD	Decision Document
DERP	Defense Environmental Restoration Program
DNT	2,6 Dinitrotoluene
EE/CA	Engineering Evaluation/Cost Analysis
ER,A	Environmental Restoration, Army
ESD	Explanation of Significant Differences
EWI	Explosive Waste Incinerator
FFA	Federal Facility Agreement
FRA	Final Remedial Action
FS	Feasibility Study
ft	feet
FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	Fiscal Year
GO/CO	Government Owned/Contractor Operated
HMX	Octogen
HRR	Historical Records Review
HRS	Hazard Ranking System
IA	Iowa
IAAAP	Iowa Army Ammunition Plant
IAAP	Iowa Army Ammunition Plant (AEDB-R designation)
IAP	Installation Action Plan
ID	Identification
IDA	Inert Disposal Area
InDA	Incendiary Disposal Area
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program

Acronyms

K	thousand
LAP	Load, Assemble and Pack
LTM	Long-Term Management
LTTD	Low Temperature Thermal Desorption
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
LUCRD	Land Use Control Remedial Design
LX-14	Product Name (polymer-bonded explosives)
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRA	Munitions Response Area
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
N/A	Not Applicable
NEPA	National Environmental Policy Act
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
OB	Open Burn
OU	Operable Unit
OUDSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
PA	Preliminary Assessment
PBA	Performance-Based Acquisition
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyls
PCP	Pentachlorophenal
PDS	Possible Demolition Site
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Cyclotrimethylenetrinitramine
RFI	RCRA Facility Investigation
RI	Remedial Investigation

Acronyms

RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
S&R	Supervision and Review
SAP	Sampling and Analysis Plan
SI	Site Investigation
SRI	Supplemental Remedial Investigation
SSHP	Site-Specific Safety and Health Plan
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TNT	Trinitrotoluene
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USATHAMA	US Toxic and Hazardous Materials Agency
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UU/UE	Unlimited Use/Unrestricted Exposure
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WBPLF	West Burn Pads Landfill

Installation Information

Installation Locale

Installation Size (Acreage): 19011
City: Middletown
County: Des Moines
State: Iowa
Other Locale Information

The IAAAP consists of 19,011 acres located adjacent to Middletown in Des Moines County, Iowa. It is approximately 8 miles west of Burlington, the largest city in Des Moines County, with an estimated population of 25,436 people.

Installation Mission

The IAAAP is an active Joint Munitions Command facility operated by the civilian contractor, American Ordnance LLC. The current mission of the IAAAP is to load, assemble and pack (LAP) ammunition items, including projectiles, mortar rounds, warheads, demolition charges, and munitions components such as fuses, primers, and boosters.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

IAAAP

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region VII Federal Facilities and Special Emphasis Branch, Superfund Division US Fish and Wildlife Service
State	Iowa Department of Natural Resources

National Priorities List (NPL) Status

A score of 30 was recorded on 01-AUG-90.

Date for RA(C) Completion: 202311

Date for NPL Deletion: TBD

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

RAB established 199708

Installation Program Summaries

IRP

Primary Contaminants of Concern: Explosives, Metals, Munitions constituents (MC), Pesticides, Polychlorinated Biphenyls (PCB), Radionuclides, Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Sediment, Soil

MMRP

Primary Contaminants of Concern: Explosives, Metals, Munitions and explosives of concern (MEC), Munitions constituents (MC)

Affected Media of Concern: Groundwater, Soil

CR

Primary Contaminants of Concern: Asbestos, Explosives, Metals, Polychlorinated Biphenyls (PCB), Radionuclides

Affected Media of Concern: Groundwater, Sediment, Soil, Surface Water

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	200903	201103	2011
Complete	200403	200509	2005
Underway	201503	201603	2016

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
EXPLOSIVE CONTAMINATED SUMPS (ACT. MEMO)	IAAP-001, IAAP-002, IAAP-003, IAAP-004, IAAP-006, IAAP-007, IAAP-008
EXPLOSIVE CONTAMINATED SUMPS (ACT. MEMO)	IAAP-001, IAAP-002, IAAP-003, IAAP-004, IAAP-006, IAAP-007, IAAP-008
FINAL SOILS ROD - OU #1	IAAP-001, IAAP-002, IAAP-003, IAAP-004, IAAP-005, IAAP-006, IAAP-007, IAAP-009, IAAP-010, IAAP-011, IAAP-012, IAAP-015, IAAP-016, IAAP-021, IAAP-032, IAAP-036, IAAP-037, IAAP-040, IAAP-042, IAAP-044
FINAL SOILS ROD - OU #1	IAAP-001, IAAP-002, IAAP-003, IAAP-004, IAAP-005, IAAP-006, IAAP-007, IAAP-009, IAAP-010, IAAP-011, IAAP-012, IAAP-015, IAAP-016, IAAP-021, IAAP-032, IAAP-036, IAAP-037, IAAP-040, IAAP-042, IAAP-044
FIRE TRAINING PIT(EE/CA)	IAAP-039
FIRE TRAINING PIT(EE/CA)	IAAP-039
FIRE TRNG PIT ACT. MEMO AND ESD	IAAP-039
FIRE TRNG PIT ACT. MEMO AND ESD	IAAP-039
INERT LANDFILL (ACTION MEMO)	IAAP-020
INERT LANDFILL (ACTION MEMO)	IAAP-020
INTERIM SOILS ROD - OPERABLE UNIT 1	IAAP-001, IAAP-002, IAAP-003, IAAP-004, IAAP-005, IAAP-006, IAAP-007, IAAP-009, IAAP-010, IAAP-011, IAAP-012, IAAP-020, IAAP-021, IAAP-032, IAAP-036, IAAP-040
INTERIM SOILS ROD - OPERABLE UNIT 1	IAAP-001, IAAP-002, IAAP-003, IAAP-004, IAAP-005, IAAP-006, IAAP-007, IAAP-009, IAAP-010, IAAP-011, IAAP-012, IAAP-020, IAAP-021, IAAP-032, IAAP-036, IAAP-040
LINE 1 & 800 PINKWATER LAG. REMOVAL (AM)	IAAP-016, IAAP-020, IAAP-044
LINE 1 & 800 PINKWATER LAG. REMOVAL (AM)	IAAP-016, IAAP-020, IAAP-044
OFF-POST GRNDWATER ROD - OU #3	IAAP-046
OFF-POST GRNDWATER ROD - OU #3	IAAP-046
PESTICIDE PIT (ACT. MEMO)	IAAP-017, IAAP-020
PESTICIDE PIT (ACT. MEMO)	IAAP-017, IAAP-020
Permanent Potable Water Supply	IAAP-046
Permanent Potable Water Supply	IAAP-046
Permanent Potable Water Supply Addendum	IAAP-046
Permanent Potable Water Supply Addendum	IAAP-046

Results Actions taken were determined to continue to be protective of human health and the environment.

Actions Off-post Groundwater model requires updating and various other minor field adjustments are required.

Plans Issuance of status report for follow on actions is scheduled to be issued in March 2012.

Recommendations and Implementation Plans:
A follow-up report was prepared and a model for OU-3 is being updated with anticipated completion prior to the 2016

5-Year / Periodic Review Summary

Recommendations and Implementation Plans:
five-year review.

Cleanup Program Summary

Installation Historic Activity

The IAAAP was founded in 1941 and has undergone modernization and expansion. In September 1941 production of supplies for World War II began. They ended in August 1945. From 1946 to 1951, the IAAAP was operated by the government to produce ammonium nitrate and to store munitions. Ammunition production resumed in 1949 and has continued to the present. From 1947 to 1975 the former US Atomic Energy Commission operated facilities on the site.

Installation Program Cleanup Progress

IRP

Prior Year Progress:

OU-1 Continued operating O&M for impoundments.

OU-3 Completed the IRAR. Continued RA(O)/LTM. Worked on LUCRD.

OU-4 Completed LUCIP and IDA Fencing Installation Work Plan. Continued RACR (Exec. Summary) and landfill monitoring and maintenance.

OU-6 Continued SRI Data Gaps Work Plan.

OU-7 Completed field work for the Final Work Plan FS. Submitted the Draft Final FS which is in dispute.

OU-9 Completed RI/FS and began the PP for construction debris sites (CC-IAAP-001 and CC-IAAP-002).

Future Plan of Action:

OU-1 Update the O&M plans and conduct O&M at the impoundments. Complete the LUCRD/LUCIP. Complete ROD updates.

OU-3 Continue the RA(O)/LTM. Complete the LUCRD/LUCIP.

OU-4 Continue O&M and LTM. Complete a RCRA RFI, RCRA/CERCLA Integration.

OU-6 Complete SRI Data Gap Work Plan and integrate the Line 1 Groundwater Investigation into OU-6.

OU-7 Complete FS, PP and ROD.

OU-9 Complete ROD then begin RA for construction debris sites (CC-IAAP-001 and CC-IAAP-002).

MMRP

Prior Year Progress:

-Developed a resolution to OU-5 formal dispute.
-Initiated contract for Historical Small Arms Range removal action.

Future Plan of Action:

-Complete the non-time critical action for the Historical Small Arms Range.
-Complete PP and ROD for the Historical Small Arms Range.

CR

Prior Year Progress:

-CC-001G will continue to be managed under IRP OU-6. Continued work toward supplemental RI.

-Site CC-01 will continue to be managed under RCRA at the direction of the USEPA.

-Completed RI/FS and began the PP for construction debris sites (CC-IAAP-001 and CC-IAAP-002).

Future Plan of Action:

-Complete the RI/FS for CC-001G.
-Complete the RFI for CC-01.
-Complete ROD then begin RA for construction debris sites (CC-IAAP-001 and CC-IAAP-002).

IOWA ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 77/17

Installation Site Types with Future and/or Underway Phases

5 Burn Area
(IAAP-012G, IAAP-032, IAAP-032G, IAAP-036, IAAP-039G)

25 Contaminated Ground Water
(IAAP-005G, IAAP-006G, IAAP-007G, IAAP-008G, IAAP-009G, IAAP-013G, IAAP-014G, IAAP-015G, IAAP-016G, IAAP-017G, IAAP-018G, IAAP-022G, IAAP-025G, IAAP-028G, IAAP-030G, IAAP-031G, IAAP-036G, IAAP-037G, IAAP-038G, IAAP-040G, IAAP-041G, IAAP-042G, IAAP-043G, IAAP-046, IAAP-047G)

2 Disposal Pit/Dry Well
(IAAP-013, IAAP-017)

2 Explosive Ordnance Disposal Area
(IAAP-012, IAAP-018)

1 Fire/Crash Training Area
(IAAP-039)

1 Incinerator
(IAAP-025)

5 Industrial Discharge
(IAAP-002G, IAAP-003G, IAAP-004G, IAAP-010G, IAAP-044G)

4 Landfill
(IAAP-020, IAAP-020G, IAAP-028, IAAP-037)

2 Mixed Waste Area
(IAAP-044, IAAP-047)

8 Spill Site Area
(IAAP-002, IAAP-003, IAAP-004, IAAP-005, IAAP-006, IAAP-007, IAAP-009, IAAP-010)

1 Storage Area
(IAAP-040)

1 Surface Disposal Area
(IAAP-015)

2 Surface Impoundment/Lagoon
(IAAP-016, IAAP-041)

1 Waste Treatment Plant
(IAAP-038)

Most Widespread Contaminants of Concern

Explosives, Metals, Munitions constituents (MC), Pesticides, Polychlorinated Biphenyls (PCB), Radionuclides, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Sediment, Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
IAAP-042	ABANDONED COAL STORAGE YARD	FRA	WASTE REMOVAL - SOILS	1994
IAAP-046	OFF POST CONTAMINATION	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	1995
IAAP-017	PESTICIDE PIT	IRA	WASTE REMOVAL - SOILS	1996
IAAP-016	LINE 1 FORMER WASTEWATER IMPOUNDMENT	FRA	WASTE REMOVAL - SOILS	1997
IAAP-012	EXPLOSIVE DISPOSAL AREA (EAST BURN PADS)	FRA	WASTE REMOVAL - SOILS	1999
IAAP-037	NORTH BURN PADS LANDFILL	FRA	REMOVAL	1999

IRP Summary

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
IAAP-039	FIRE TRAINING PIT	IRA	WASTE REMOVAL - SOILS	1999
IAAP-039	FIRE TRAINING PIT	IRA	THERMAL DESORPTION	1999
IAAP-006	LINE 5A AND 5B AMMO ASSEMBLY	FRA	WASTE REMOVAL - SOILS	2000
IAAP-011	LINE 800 AMMO RENOV	IRA	REMOVAL	2000
IAAP-021	DEMOLITION AREA/DEACTIVATION FURNACE	IRA	WASTE REMOVAL - SOILS	2000
IAAP-040	ROUNDHOUSE TRANSFORMER STORAGE AREA	IRA	WASTE REMOVAL - SOILS	2000
IAAP-044	LINE 800 & PINKWATER LAGOON	IRA	WASTE REMOVAL - SOILS	2000
IAAP-045	FORMER FUEL STATION UST'S	FRA	EX SITU SOIL TREATMENT	2002
IAAP-046	OFF POST CONTAMINATION	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	2002
IAAP-032	BURN CAGES, BCLF; WEST BURN PADS, WBPLF	FRA	WASTE REMOVAL - SOILS	2003
IAAP-039	FIRE TRAINING PIT	IRA	WASTE REMOVAL - SOILS	2004
IAAP-005	LINE 4A AND 4B AMMO ASSEMBLY	FRA	WASTE REMOVAL - SOILS	2005
IAAP-009	LINE 8 AMMO LAP(FUZE/ROCKET)	FRA	WASTE REMOVAL - SOILS	2005
IAAP-010	LINE 9 AMMO LAP (MINE)	FRA	WASTE REMOVAL - SOILS	2005
IAAP-040	ROUNDHOUSE TRANSFORMER STORAGE AREA	FRA	REMOVAL	2005
IAAP-002	LINE 2 AMMO LAP(ARTILLERY/SHAPE)	FRA	WASTE REMOVAL - SOILS	2007
IAAP-003	LINE 3 AMMO LAP (ARTILLERY)	FRA	WASTE REMOVAL - SOILS	2007
IAAP-046	OFF POST CONTAMINATION	FRA	GROUND WATER TREATMENT	2007
IAAP-013	INCENDIARY DISPOSAL AREA (EAST YARD D)	FRA	WASTE REMOVAL - SOILS	2008
IAAP-018	POSSIBLE DEMOLITION SITE(SOUTH YARD G)	FRA	WASTE REMOVAL - SOILS	2008
IAAP-047	Central Test Area	FRA	REMOVAL	2008
PBC at Iowa	PBC at Iowa	FRA	OTHER	2014

Duration of IRP

Date of IRP Inception: 197803

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 202311/204709

Date of IRP completion including Long Term Management (LTM): 205512

IRP Contamination Assessment

Contamination Assessment Overview

The IAAAP is located on US Highway 34, approximately 8 miles west of Burlington, Iowa. The facility is a government owned/contractor operated (GO/CO) military industrial installation under the jurisdiction of the US Army Joint Munitions Command, headquartered in Rock Island, Illinois. Its primary mission is to manufacture and LAP ammunition items.

The plant was established in July 1941 as the Iowa Ordnance Plant. The plant's mission was to LAP ammunition. It produced munitions for World War II until August 1945 when plant operations reverted to US Army control. Until 1951 its mission was the storage of ammunition and surveillance. From 1947 to 1975 the former US Atomic Energy Commission occupied portions of the IAAAP. Since 1951, when Mason and Hanger-Silas Mason Co., Inc. began operations, the plant has been a GO/CO. The IAAAP is currently an active installation.

The primary source of contamination at the site is attributable to past operating practices during which explosives-contaminated wastewater and sludge were discharged to uncontrolled on-site lagoons and impoundments. Additional sources of contamination included open burning (OB) of explosives materials and munitions and land filling of waste material. Currently, process wastewaters are treated and recycled, while only a small portion of the treated wastewater, containing residual explosives and other contaminants regulated under the plant's national pollutant discharge elimination system (NPDES) permit, is discharged to the surface.

In August 1989, the installation was proposed for the NPL, because surface water contaminated with explosives was leaving the installation boundary. The IAAAP hazard ranking system (HRS) score is 29.73. It was placed on the NPL in August 1990. In September 1990, a federal facility agreement (FFA) was signed by the USEPA, Region VII and the US Army; it became effective in December 1990.

The FFA originally listed 30 solid waste management units (SWMU) as IAAP-1 through IAAP-30; these sites are represented in the AEDB-R as sites IAAP-001 through IAAP-030. The Deactivation Furnace Site, IAAP-023, has been merged with the Demolition Area Site, IAAP-021, because it is located within the confines of the demolition area. Since publication of the FFA, sites IAAP-031 through IAAP-043 were identified in the February 1991 US Army Toxic and Hazardous Materials Agency (USATHAMA) draft potential AOCs supplement document. Sites IAAP-032 through IAAP-035 were collectively listed under the number IAAP-032, because of their proximity to one another. The Line 800 Pinkwater Lagoon was added as IAAP-044. In the fall 1999 AEDB-R submission, the former fuel station underground storage tanks (UST) site (IAAP-045) was added. This site was separated from IAAP-006 to better manage the soil and groundwater cleanup efforts from the 1988 leaking UST removal. Sites IAAP-046 and IAAP-047 were created to address the off-post groundwater and the Central Test Area, respectively.

The site PBC@Iowa was established to manage sites covered under a performance based acquisition (PBA) in 2004. In fiscal year (FY) 02, nine groundwater designated sites were created to better manage groundwater cleanup. They are IAAP-002G, IAAP-003G, IAAP-004G, IAAP-010G, IAAP-012G, IAAP-020G, IAAP-032G, IAAP-039G and IAAP-044G. Two other sites, IAAP-011, IAAP-044, were consolidated so they can be better managed, as they are contiguous. In 2012, the remaining groundwater sites were established to manage costs and actions associated with groundwater and surface water cleanup.

In 1991 the preliminary assessment (PA)/site inspection (SI) was conducted. In 1996 the site-wide remedial investigation (RI) was completed. The interim operable unit (OU)-1 soils record of decision (ROD), signed in March 1998, addressed the excavation, relocation and placement of contaminated soils from 15 sites to the inert disposal area (IDA), IAAP-020.

The final soils ROD, signed in September 1998, addressed the treatment of the most highly contaminated fraction of that soil.

In July 2002, portions of the IAAAP used by the former US Atomic Energy Commission were designated by the US Army Corps of Engineers (USACE) to be under the Formerly Utilized Sites Remedial Action Program (FUSRAP). Thus far, seven FUSRAP areas have been identified. These include Line 1 (IAAP-001), Firing Sites Area (IAAP-030), West Burn Pads Area [south of the road] (part of IAAP-032), Warehouse 3-01 (located in IAAP-003), Yard G, Yard C, and Yard L (near Warehouse L-1, -2, -3). Additionally, four areas were screened by FUSRAP in 2004 to determine if radiological contaminates from USAEC were present. These screening areas include the IDA (IAAP-020), Demolition Area/Deactivation Furnace (IAAP-021), Former Line 1 Impoundment (IAAP-016), and the explosive disposal area. The explosive disposal area includes the North Burn Pads (IAAP-036), North Burn Pads Landfill (IAAP-037), the West Burn Pads [area north of road] (part of IAAP-032), and the East Burn Pads (part of IAAP-032). No radiological contamination attributable to the US Atomic Energy Commission was found at a screening area. The USACE will respond to all releases and threats of releases of hazardous substances, pollutants, or contaminants, with the exception of ground and surface water contamination, at all FUSRAP areas.

IRP Contamination Assessment

Contamination Assessment Overview

The OUs were re-structured in October 2009. They are identified as follows:

OU-1: Soils OU (no change from previous structure)
OU-3: Off-site Groundwater OU (formerly addressed off-site and on-site groundwater)
OU-4: IDA Closure OU (formerly installation-Wide OU)
OU-5: MMRP OU (no change from previous structure)
OU-6: On-site Groundwater OU (includes IDA)
OU-7: Installation-Wide OU (former OU-4 without IDA)
OU-8: FUSRAP Specific OU, no relevance to IRP
OU-9: Contingency Soils Remedy OU (now Construction Debris Sites OU)

In 2004 six sites were transferred from IRP action to Compliance-related Cleanup (CC) action. They were:
IAAP-019, Contaminated Clothing Laundry (CCL)
IAAP-021, Demolition Area/Deactivation Furnace
IAAP-024, Contaminated Waste Processor (CWP)
IAAP-026, Main Sewage Treatment Plant/Drying Beds
IAAP-027, Fly Ash Landfill
IAAP-029, Line 3A Sewage Treatment Plant/Drying Beds

In FY06, OU5 was established to address the Military Munitions Response Program (MMRP) sites. Through the MMRP, a total of eight sites have been established at IAAAP.

In FY08, a ROD was signed for site IAAP-020, allowing for the closure of the IDA.

In 2009, the Army identified two construction debris sites that require assessment and possible action. In 2013, these sites were designated as OU9. All media at these sites are addressed under this OU.

Cleanup Exit Strategy

OU-6, OU-7, and OU-9 still have not met RIP/response complete (RC). Another PBA action is planned to be awarded in FY16 to complete RI/feasibility study (FS) and ROD along with some additional remediation. A final ROD for OU-4 will also be created.

IRP Previous Studies

	Title	Author	Date
1976			
	Aquatic Field Survey, Iowa Army Ammunition Plant	US Army Medical Research & Development Command	NOV-1976
1979			
	Aerial Color Infrared Photography Interpretation, Iowa Army Ammo Plant	US Army Toxic & Hazardous Materials Agency	SEP-1979
1980			
	Contamination Survey Scope of Work	Unknown	JAN-1980
	Installation Assessment of Iowa Army Ammunition Plant	US Army Toxic & Hazardous Materials Agency	JAN-1980
1981			
	Evaluation of Pinkwater Lagoon, Line 6 and Line 4A	SCS Engineers	SEP-1981
1982			
	Underground Pollution Investigation at Iowa Army Ammunition Plant	SCS Engineers	FEB-1982
	Subsurface Investigation at Site Z-1 (Abandoned Pinkwater Lagoon) at Iowa Army Ammunition Plant	SCS Engineers	FEB-1982
	Contamination Survey, Iowa Army Ammunition Plant	US Army Toxic and Hazardous Materials Agency	SEP-1982
1984			
	Follow-On Study of Environmental Contamination at the Iowa Army Ammunition Plant	US Army Toxic & Hazardous Materials Agency	AUG-1984
1985			
	Groundwater Quality Assessment Plan Inert Landfill and Line 6	AEHA	JUN-1985
	Final Report Waste Compatibility Line 4A Spray Pond Liner	Eugene A. Hickok & Associates	JUN-1985
	RCRA Facility Assessment of Iowa Army Ammunition Plant	US Environmental Protection Agency, Region VII, Kansas City	JUN-1985
	Water Quality Engineering Consultation, Investigation of Groundwater Contamination, Iowa Army Ammunition Plant	US Army Toxic and Hazardous Materials Agency	SEP-1985
1986			
	Midwest Site Confirmatory Survey, Sampling Report for Iowa Army Ammunition Plant	USAEHA	AUG-1986
1987			
	Confirmatory Water Sampling, Iowa Army Ammunition Plant	US Army Toxic and Hazardous Materials Agency	JUN-1987
	Test Boring and Monitoring Well Installation Plan at the Inert Landfill and Line 6	Terracon EC	DEC-1987
1988			
	Sampling and Analysis Plan/Quality Control/Quality Assurance Plan for Inert Landfill and Line 6	Terracon EC	MAR-1988
	IAAP Closure Plan for Gravel Filter Beds and Drainage Ditches at Line 6	Mason & Hanger	JUL-1988

IRP Previous Studies

	Title	Author	Date
1989			
	Endangerment Assessment of Former Line 1 Impoundment and Line 800 Pinkwater Lagoon	US Army Toxic and Hazardous Materials Agency	JUL-1989
	Final Report Groundwater Quality Assessment Inert Landfill and Line 6 Areas	Terracon EC	DEC-1989
1990			
	Final Fuel Station Tank Removal - Work Plan	Dames & Moore	FEB-1990
	Petroleum Leak/Spill Area, Iowa Army Ammunition Plant	US Army Toxic and Hazardous Materials Agency	MAR-1990
	Replace/Upgrade Explosives Collection Sumps Study	Mason & Hanger	DEC-1990
1991			
	Preliminary Assessment (PA) for the 43 IAAAP Sites	Jaycor	JAN-1991
	Draft Final Potential Areas of Concern Supplement	US Army Toxic and Hazardous Materials Agency	MAY-1991
	Sampling and Analysis Plan and Field Sampling Plan, Volume 2	Jaycor	JUN-1991
	Sampling and Analysis Plan and Quality Assurance Project Plan (Revised) Volume 1	Jaycor	JUL-1991
	Conceptual Program Plan for RI/FS at IAAAP	Jaycor	SEP-1991
1992			
	Comprehensive Monitoring Evaluation (Final Report)	PRC Environmental Management	JAN-1992
	Final Work Plan for Remedial Investigation/Feasibility Study (also known as the Site Investigation of Iowa Army Ammunition Plant)	US Army Toxic and Hazardous Materials Agency	JUN-1992
	Risk Assessment Protocol Document for the RI/FS	Jaycor	OCT-1992
1993			
	Basewide Analysis & Drilling Procedures	Jaycor	JAN-1993
	Site Characterization Report R01	Jaycor	JAN-1993
	Site Characterization Report R02 & R03	Jaycor	JAN-1993
	Site Characterization Report R04 - R11	Jaycor	JAN-1993
	Site Characterization Report R12 - R21	Jaycor	JAN-1993
	Site Characterization Report R22 - R30	Jaycor	JAN-1993
	Preliminary Site Characterization Reports	Jaycor	MAR-1993
	Acute Toxicity Evaluation of Various Effluents from the IAAAP	Environmental Science & Engineering, Inc.	APR-1993
	Final Report - Contamination Assessment of Concrete Sumps	Jaycor	JUN-1993
	Public Meeting Transcript, Off-Post Rathbun Connection	M. Jane Weingart, Certified Shorthand Reporter	AUG-1993
	Final Work Plan and Groundwater Quality Assessment Plan for Trench 5 and Line 6	Earth Technology Corporation	OCT-1993
	Site Clean-up Report Contaminated Waste Processor	Geotechnics	NOV-1993

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	Title	Author	Date
1994			
	Fuel Station Site Clean-Up Report	Geotechnics	APR-1994
	Groundwater Assessment Trench 5 and Line 6	Unknown	MAY-1994
	Draft Final Report (Revised) Feasibility Study Former Line 1 Impoundment and Pinkwater Lagoon	Jaycor and CDM Federal Programs Corporation	JUN-1994
	Draft Final Report (Revised) Baseline Human Health Ecological Risk Assessment Former Line 1 Impoundment and Pinkwater Lagoon	Jaycor and ICAIR	JUN-1994
	Final Report for Line 6 and Billet Splitter Closure	Corps of Engineers	JUN-1994
	Pesticide Pit and Explosive Contaminated Sumps Removal Actions	OHM	SEP-1994
	Final EE/CA for Sumps	CDM Federal Programs Corporation	OCT-1994
	Final Engineering Evaluation/Cost Analysis for Pesticide Pit Removal	CDM Federal Programs Corporation	OCT-1994
	Inert Landfill Closure Plans	Corps of Engineers	OCT-1994
	Accelerated Groundwater Quality Assessment for the Ash Disposal Cell in Trench 5 and Line 6, Iowa Army Ammunition Plant	USAEC	OCT-1994
	Draft EE/CA for the Pinkwater Lagoon and the Line 1 Impoundment	CDM Federal Programs Corporation	DEC-1994
1995			
	Draft Final Field Sampling Plan Addendum Follow-On RI Sampling	Jaycor	MAR-1995
	Action Memorandum for the Pesticide Pit	CDM Federal Programs Corporation	MAR-1995
	Fuel Station CADR	ERS	MAR-1995
	Sampling and Analysis Plan for Rapid Response Interim Removal Actions at the Pesticide Pit and Explosive Contaminated Sumps	OHM	APR-1995
	Final Work Plan - Rapid Response Interim Removal Action at the Pesticide Pit and Explosive Contaminated Sumps	OHM	APR-1995
	Draft Field Investigation Report Former Line 1 Impoundment and Line 800 Pinkwater Lagoon	Corps of Engineers	APR-1995
	Draft Final Engineering Evaluation/Cost Analysis for Three Removal Actions	CDM Federal Programs Corporation	MAY-1995
	Project Summary Report for the Environmental Groundwater Monitoring Covering the period July 15, 1994 - June 30, 1995, Technical Data Report for the Environmental Groundwater Monitoring FY94 Sampling, Technical Data Report for the Environmental Groundwater Monitoring FY95	LB&M Associates	JUN-1995
	Draft Evaluation of Treatment Alternatives Line 1 Impoundment and Line 800 Pinkwater Lagoon	Plexus Corp.	JUN-1995
	Fuel Station Site Cleanup Reports dated Aug 1992, June 1993, Dec 1994, and July 1995	Unknown	JUL-1995
	Installation Environmental Assessment	Mason & Hanger-Silas Mason Co., Inc.	OCT-1995
	Proposal for Corrective Action Management Unit Designation	EPA	NOV-1995
	Final Action Memorandum for the Explosive-	CDM Federal Programs	NOV-1995

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	Title	Author	Date
1995			
	Contaminated Sump Removal	Corporation	
1996			
	Draft Final Report Removal Actions (Pesticide Pit and Explosive Contaminated Sumps)	OHM	JAN-1996
	Final Implementation Proposal for Environmental Protection	ECC	FEB-1996
	Designation of CAMU	EPA	MAR-1996
	Report for the Fall 1995 Monitoring of IRP Wells	Mason & Hanger	MAR-1996
	Plant Uptake Studies (1990-1996)	ORNL	APR-1996
	Engineering Evaluation/Cost Analysis (EE/CA) Study Fire Training Pit Iowa Army Ammunition Plant	USACE, Omaha	MAY-1996
	Revised Draft Final Remedial Investigation Risk Assessment Iowa Army Ammunition Plant	USACE, Omaha	MAY-1996
	Sampling & Analysis Plan for Treated Discharges of the Water Contained in the Line 800 Pinkwater Lagoon	ECC	AUG-1996
	Wetland Borrow Area Assessment Report	ECC	AUG-1996
	Final Work Plan for Multiple Removal Actions	ECC	AUG-1996
	Information Summary for Focused Feasibility Study Sites	USACE, Omaha	SEP-1996
	Health and Safety Plan for a Biological Soil Slurry Lagoon Pilot Scale Demonstration	Environmental Research Division	SEP-1996
	Report for the Spring 1996 Monitoring of IRP Wells	Mason & Hanger	SEP-1996
	Action Memorandum for the Line 800 Pink Water Lagoon, Former Line 1 Impoundment	USACE, Omaha	OCT-1996
	Final Report Addendum for Final Transportation and Disposal and Other Activities	OHM	NOV-1996
	Phytoremediation Studies	US Army Corps of Engineers Waterways Experiment Station	DEC-1996
1997			
	Phytoremediation Studies	US Army Corps of Engineers Waterways Experiment Station	JAN-1997
	Site Groundwater Investigation Fire Training Pit Work Plan (Final) Sampling and Analysis Plan (Final)	Harza Engineering Company	APR-1997
	Site Safety Submission for EDA (East Burn Pads)	Corps of Engineers	APR-1997
	Draft Final Soils Focused Feasibility Study	US Army Environmental Center	MAY-1997
	Proposed Plan for Interim Action - Soils Operable Unit	USAEC	MAY-1997
	Multiple Removal Actions Transmittal of Final Radio Active Isotope Analytical Report	Environmental Chemical Corporation	MAY-1997
	Final Work/Quality Assurance Plan - Ecological Risk Assessment Addendum	Harza Engineering Company	JUL-1997
	Report for the First Cycle 1997 Monitoring of IRP Wells	Mason & Hanger	AUG-1997
	Action Memorandum for the Inert Landfill at the Iowa Army Ammunition Plant	USACE, Omaha	SEP-1997
	Multiple Removal Actions - Construction Progress Photographs	Corps of Engineers	SEP-1997

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	Title	Author	Date
1997			
	Draft Report of Action Laundry Effluent Pretreatment Sampling & Analysis	Mason & Hanger	SEP-1997
	Report for the Second Cycle 1997 Monitoring of IRP Wells	Mason & Hanger	SEP-1997
	Bench-Scale Composting Investigation for IAAAP Soils	US Army Corps of Engineers Waterways Experiment Station	NOV-1997
	Draft Environmental Protection Plan Iowa Army Ammunition Plant Focused Feasibility Study Soils Removal	USACE, Omaha	NOV-1997
	Fire Training Pit-Iowa Army Ammunition Plant Explanation of Significant Differences & Action Memorandum	USACE, Omaha	DEC-1997
	Groundwater Feasibility Study Report	USACE, Omaha	DEC-1997
1998			
	Quality Control Summary Report - Supplemental Groundwater Remedial Investigation	Harza Engineering Company, Chicago, IL	JAN-1998
	Multiple Removal Actions Final Water Treatment Plan for Perched Water at the IDA	Environmental Chemical Corporation	FEB-1998
	Draft Final Report Historical Ecological Risk Assessment Addendum	Harza	MAR-1998
	U. S. Army Interim Soils Action for Operable Unit #1 Record of Decision	USACE, Omaha	MAR-1998
	Closure/Post Closure Plans for the Inert Landfill April 1998 Amendment to Closure/Post Closure Plan February 1997	US Corps of Engineers	APR-1998
	Final Revised Work Plan & Revised Contractor Quality Control Plan (CQCP) - Phase 1	Environmental Chemical Corporation	MAY-1998
	Final Soils Feasibility Study Report	USACE, Omaha	JUN-1998
	RCRA Closure Report for the Explosive Waste Incinerator	PDC Technical Services	JUN-1998
	Final Proposed Plan for OU #1	USACE, Omaha	JUN-1998
	Final Work Plan, Final Sampling and Analysis Plan Addendum, Final Site Safety & Health Plan Addendum - Fire Training Pit	Environmental Chemical Corporation	JUL-1998
	Public Meeting Transcript for Superfund Soils OU1 Proposed Plan	MJW Court Reporting Services	JUL-1998
	Site Monitoring Reports for the Former Fuel Station March 1994-July 1998	ERS	JUL-1998
	Final Record of Decision Soils OU #1	USACE, Omaha	AUG-1998
	Draft Interim Groundwater Feasibility Study Report	USACE, Omaha	AUG-1998
	Draft/Final Work Plan & Draft/Final Sampling and Analysis Plan - Supplemental Remedial Investigation Line 800 Pinkwater Lagoon	Harza Engineering Company	AUG-1998
	Demonstration Test Plan for Low Temperature Thermal Desorption of Explosive Soils	USACE, Omaha	NOV-1998
	Summary Report Pre-Designed Excavation Delineation at 5A/5B, Roundhouse RDX Site, IDA Storage Yard, Burning Grounds	USACE, Omaha	DEC-1998
1999			

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	Title	Author	Date
1999			
	Independent Technical Review Questionnaire Response	Iowa Army Ammo Plant	JAN-1999
	Draft Monitoring Well Management Plan	USACE, Omaha	JAN-1999
	Draft Quality Control Summary Report - Supplemental Remedial Investigation Line 800/Pinkwater Lagoon	HARZA	FEB-1999
	Line 1 & 800 Phytoremediation Monitoring	Phytoworks Incorporated	FEB-1999
	Analytical Data Report - Supplemental Groundwater Remedial Investigation Line 800/Pink Water Lagoon	Harza Engineering Company, Chicago, IL	MAR-1999
	Recommendations for Additional Remedial Investigation Line 800/Pinkwater Lagoon	Harza Engineering Company, Chicago, IL	MAY-1999
	Draft Final Work Plan Addendum, Contingency Plan, CQCP Addendum, SAP Addendum, SSHP Addendum - Phase 2	Environmental Chemical Corporation	JUN-1999
	Work Plan Addendum - Supplemental Remedial Investigation Line 800 Pinkwater Lagoon (Draft)	Harza Engineering Company	SEP-1999
	Test Plan for a Biological Soil Slurry Lagoon Pilot Scale Demonstration	Environmental Research Division	SEP-1999
	Draft Long-Term Monitoring Events Fall 1999 and Spring 2000 Work Plan Addendum	Harza Engineering Company	NOV-1999
	Iowa AAP Public Health Assessment	Agency for Toxic Substances & Disease Registry	DEC-1999
	Final Report: Closure, Demobilization and Sampling Activities at the Biological Soil Slurry Lagoon	Environmental Research Division	DEC-1999
	Draft Work Plan Amendment & SAP Amendment & SSHP Amendment - Phase 3	Environmental Chemical Corporation	DEC-1999
2000			
	Technical Memorandum Supplemental Investigation Off-Site Groundwater, Surface Water & Sediment	Harza Engineering Company, Chicago, IL	JAN-2000
	Site Monitoring Reports for the Former Fuel Station February 1999, August 1999, and January 2000	Maximum Technologies	JAN-2000
	Fuel Station Closure Report	Trileaf Corporation	JAN-2000
	Draft Final Letter Work Plan for Monitoring Well Abandonment and Maintenance	TN & Associates	APR-2000
	Long-Term Monitoring Spring 2000 Work Plan Addendum	Harza Engineering Company	APR-2000
	Modification to the Sampling & Analysis Plan (SAP) Revised Investigation Related to the Ecological Assessment	Harza Engineering Company	APR-2000
	RBCA Tier 2 Report (Revised)	Trileaf Corporation	MAY-2000
	Well Completion Report Fall 1999 Long Term Monitoring	Harza Engineering Company, Chicago, IL	JUN-2000
	Long Term Monitoring Report Fall 1999	Harza Engineering Company, Chicago, IL	JUN-2000
	Site Assessment Project Plan for AET Rev. 2	AET	JUN-2000
	Quality Control Summary Report - Groundwater Monitoring Program Fall 1999 Sampling Event	Harza Engineering Company, Chicago, IL	JUL-2000
	Well Completion Report spring 2000 Groundwater Monitoring Event	Harza Engineering Company, Chicago, IL	JUL-2000
	Draft Treatability Study for Barium Impacted Soil Stabilization	Cape Environmental	AUG-2000

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	Title	Author	Date
2000			
	Quality Control Summary Report - Off-Site Groundwater Investigation (OU3) Phase I, II, III	Harza Engineering Company, Chicago, IL	SEP-2000
	Eco-Risk Round 2 Sampling	Harza Engineering Company, Chicago, IL	SEP-2000
	Groundwater Monitoring Report Spring 2000	Harza Engineering Company, Chicago, IL	OCT-2000
	Final Remedial Action Report Fire Training Pit	Environmental Chemical Corporation	OCT-2000
	Final Remedial Action Report Focused Feasibility Study Sites Remedial Action Phase I	Environmental Chemical Corporation	OCT-2000
	Monitoring Well Maintenance and Abandonment Report	TN & Associates	OCT-2000
	Draft Final Work Plan Amendment Focused Feasibility Studies Soils Remediation Barium Contaminated Soils Stabilization	Cape Environmental	OCT-2000
	Site Monitoring Report	Trileaf Corporation	DEC-2000
	Site Monitoring Reports for the Former Fuel Station Sampled May 2000 and November 2000, Reported June 2000 and December 2000	Trileaf Corporation	DEC-2000
2001			
	IAG Community Relations Plan	IAAAP	FEB-2001
	Field Sampling Report AET BLDG 600-84	AET	FEB-2001
	Iowa AAP Scoring Survey Plan Firing Site 6 & 12	USACE, Omaha	APR-2001
	Fall 2000 Groundwater Monitoring Results Summary	URS Corporation	APR-2001
	Final Remedial Action Report Focused Feasibility Study Sites Remedial Action Phase 2	Environmental Chemical Corporation	APR-2001
	Ecological Risk Assessment - Screening Level Risk Assessment	Harza Engineering Company, Chicago, IL	APR-2001
	Final Report - Multiple Removal Actions	Environmental Chemical Corporation	APR-2001
	Quality Control Summary Report - Off-Site Groundwater Investigation (OU) Phase IV	Harza Engineering Company, Chicago, IL	MAY-2001
	Final spring 2001 Groundwater Monitoring Work Plan Addendum	URS Corporation	MAY-2001
	Bioremediation/Metals Treatment	Cape Environmental	JUN-2001
	Options for Corrective Action for Former Fuel Station	Trileaf Corporation	JUN-2001
	Draft Final Technical Memorandum Evaluation of Contaminant Sources to Surface Streams	Harza Engineering Company	JUL-2001
	Draft Final Supplemental Remedial Investigation Report Line 800 Pinkwater Lagoon	Harza Engineering Company	JUL-2001
	Corrective Action Design Report for Former Fuel Station	Trileaf Corporation	JUL-2001
	Bioremediation/Metals Treatment WBPLF Soils in Inert Landfill Trench 6 & Trench 7 Work Plan Amendment	Cape Environmental	JUL-2001
	Draft Final Groundwater Monitoring Program	Harza Engineering Company	AUG-2001
	Supplemental Groundwater Remedial Investigation (1997) Revised Draft Final	Harza Engineering Company, Chicago, IL	AUG-2001
	Development of Dose Estimation Models and Toxicity Reference Values Ecological Risk Assessment	Harza Engineering Company, Chicago, IL	AUG-2001

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2001

Title	Author	Date
Screening Level Risk Assessment, Ecological Risk Assessment	Harza Engineering Company, Chicago, IL	AUG-2001
Quality Control Summary Report Groundwater Monitoring Program spring 2000 Sampling Event	Harza Engineering Company, Chicago, IL	AUG-2001
Fall 2000 and Spring 2001 Groundwater Monitoring Results Summary	URS Corporation	AUG-2001
Bioremediation/Metals Treatment WBPLF Soils in Inert Landfill Trench 6 & Trench 7 Supplemental Work Plan	Cape Environmental	AUG-2001
Draft Off-Site Groundwater Remedial Investigation Work Plan Addendum	URS Corporation	AUG-2001
Draft Final Work Plans for Supplemental Remedial Investigation Line 1 & Firing Site (Including Historical Site Assessment)	TN & Associates	SEP-2001
Draft Final Excavation Report - Phase 3	Environmental Chemical Corporation	NOV-2001
Site Monitoring Report 3rd Quarter 2001, Former Fuel Station	Trileaf Corporation	NOV-2001
Final Report Results for Sampling and Analysis & Disposal of Six 55 Gallon Drums with Unidentified Contents	American Ordnance	NOV-2001
Final FUSRAP Preliminary Assessment	US Army Corps of Engineers, St. Louis, MO	DEC-2001
Addendum to Screening Level Risk Assessment Ecological Risk Assessment	Montgomery Watson Harza	DEC-2001

2002

Final A.O. Construction Projects Sampling and Analysis Work Plan	URS Corporation	JAN-2002
Draft Final Fall 2000 spring 2001 Groundwater Monitoring Report	URS Corporation	FEB-2002
Draft Final Facility Wide Work Plan	URS Corporation	FEB-2002
Draft Final Direct-push Field Investigation Technical Memorandum & Revised Work Plan Off-Site Remedial Investigation	URS Corporation	APR-2002
Draft Technical Memorandums No 1-4 for the Ecological Risk Assessment	Harza Engineering Company	APR-2002
Final Technical Memorandum Supplemental Investigation Off-Site Groundwater, Phase IV	Harza	MAY-2002
Draft spring 2002 Groundwater Monitoring Work Plan Addendum	Hydrogeologic	MAY-2002
Draft Final Line 1 & FS Supplemental RI Report	TN & Associates	AUG-2002
Draft Final Report of Over Excavation for the Former Fuel Station	Trileaf Corporation	AUG-2002
Draft Final Work Plan Addendum Metals Treatment West Burn Pads Landfill Soils in Inert Landfill Trench 6 and Trench 7	Cape Environmental	AUG-2002
Site Monitoring Report for the Fuel Station	Trileaf Corporation	OCT-2002
Draft Final Fire Training Pit, West Burn Pads Area, East Burn Pads Feasibility Study Data Collection Work Plan Addendum	URS Corporation	OCT-2002
Draft Final Lines 2, 3, and 9 Feasibility Study Data Collection Work Plan	URS Corporation	OCT-2002
Final Aerial Radiation Survey Work Plan	Environmental Assessment Division	OCT-2002

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	Title	Author	Date
2002			
	Draft Final Remedial Action Report Focused Feasibility Soil Study Sites, Phase III, West Burn Pads Area	Cape Environmental	DEC-2002
	Off-Site Monitoring Well and Staff Gauge Photographic Log	URS Corporation	DEC-2002
2003			
	Draft Final ESD for the Final OU1 Soils ROD, January 2003 signed April 2003	IAAAP	JAN-2003
	Draft Final Technical Memorandum Groundwater Flow and Contaminate Fate & Transport Modeling Line 800 Pinkwater Lagoon	URS Corporation	FEB-2003
	Draft Final Line 800 Pinkwater Lagoon Feasibility Study	URS Corporation	FEB-2003
	Initial Groundwater Analytical Results & Proposed Monitoring Well Locations Six Sites Feasibility Study Data Collection	URS Corporation	FEB-2003
	Line 6 Sewer Collection System Visual Reconnaissance for UXO	American Ordnance	MAR-2003
	Draft Final Work Plan for Supplemental Remedial Design (Including Historical Site Assessment) for Phase 4 Soil Sites	TN & Associates	MAR-2003
	Draft Final Off-Site Remedial Investigation Report	URS Corporation	APR-2003
	Draft Proposed Plan for the Line 800 Pinkwater Lagoon Groundwater Explosives Plume	URS Corporation	APR-2003
	Draft Final Aerial Radiological Survey	Argonne National Lab and Remote Sensing Lab	JUL-2003
	Draft Final Facility Wide Work Plan Remedial Design/Remedial Action Activities OU1 Rev. 2	Shaw Environmental, Inc.	JUL-2003
	Draft Final Spring 2002 Groundwater Monitoring Report	Hydrogeologic	AUG-2003
	Final Supplemental Work Plan for the Fire Training Pit Removal Action	ECC	AUG-2003
	Report for the Investigation of the Tar-Like Substance Piles at Iowa AAP	MKM Engineers, Inc.	SEP-2003
	Initial Groundwater Analytical Results Six Sites Feasibility Study Data Collection	URS Corporation	SEP-2003
	Draft Laboratory Qualifications Package	Shaw Environmental, Inc.	OCT-2003
	Draft Site Monitoring Report for the Fuel Station	Trileaf Corporation	OCT-2003
	Iowa AAP Health Consultation: Environmental Pathway Evaluation for Beryllium & Depleted Uranium	Agency for Toxic Substances & Disease Registry	DEC-2003
2004			
	Final Line 9 Remedial Alternative Analysis	URS Corporation	JAN-2004
	Final Line 3 Remedial Alternative Analysis	URS Corporation	JAN-2004
	IAAP Sampling and Reconnaissance of Brush Creek	C.C. Johnson & Malhotra, P.C.	JAN-2004
	Final Line 2 Remedial Alternative Analysis	URS Corporation	FEB-2004
	Draft Final Off-Site Groundwater Feasibility Study	URS Corporation	MAR-2004
	Draft Final Technical Memorandum Groundwater Flow and Contaminant Fate and Transport Modeling Off-Site Groundwater	URS Corporation	MAR-2004

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2004

Title	Author	Date
Work Plan for the UXO Survey of Load Line 6 and Central Test Area	MKM Engineers	MAY-2004
Six Sites Feasibility Study Data Collection Monitoring Well and Staff Gauge Installation Documentation and Photo Log	URS Corporation	MAY-2004
Final Fire Training Pit Groundwater Remedial Alternative Analysis	URS Corporation	MAY-2004
Draft Final Remedial Action Work Plan for Soil Excavation Phase 4 Soil Sites	Shaw Environmental, Inc.	MAY-2004
Final East Burn Pads Groundwater Remedial Alternative Analysis	URS Corporation	JUN-2004
Final West Burn Pads Groundwater Investigation	URS Corporation	JUN-2004
Draft Technical Memorandum No. 5 for the Baseline Ecological Risk Assessment	US Army Corps of Engineers	JUL-2004
Revised Draft Final Off-Site Groundwater Proposed Plan	URS Corporation	JUL-2004
Draft After Action Report Installation & Maintenance of Monitoring Well Roadways	MKM Engineers, Inc.	JUL-2004
Public Meeting Transcript for Off-Post Groundwater Proposed Plan	URS Corporation	JUL-2004
Former Fuel Station No Further Action Documentation	Trileaf Corporation	AUG-2004
Draft Final Historical Records Review for Line 6, Line 800, Central Test Area, and Deactivation Furnace	TN & Associates	OCT-2004
Draft Final Baseline Ecological Risk Assessment	Montgomery Watson Harza	OCT-2004
Draft Final Off-Site Groundwater Treatability Study Test Plan for Insitu Biodegradation of RDX in Off-Site Groundwater	Tetra Tech, Inc.	NOV-2004
Draft Final Brush Creek Point Source Control Work Plan	Tetra Tech, Inc.	NOV-2004
Draft Final 2003 Groundwater Monitoring Report	Hydrogeologic	DEC-2004

2005

Draft Final Historical Records Review for Line 2, Line 3, Line 3A, Incendiary Disposal Area, Old Fly Ash Waste Pile, Possible Demolition Site, Explosives Waste Incinerator, Construction Debris Landfill, and Line 3A Pond	Shaw Environmental, Inc.	JAN-2005
Draft Final 2004 Groundwater Monitoring Report	Hydrogeologic	FEB-2005
Draft Final Treatability Study Test Plan for In Situ Biodegradation of On-Post Groundwater	Tetra Tech, Inc.	APR-2005
Final Brush Creek Point Source Control Treatment System Design	Tetra Tech, Inc.	MAY-2005
Draft Final Report for the Soil Data Collection at The Incendiary Disposal Area, Fly Ash Waste Pile, Possible Demolition Site, Line 3A Pond, Explosive Waste Incinerator and Construction Debris Landfill	MKM Engineers, Inc.	MAY-2005
Draft Final MEC Density Survey Report for Line 6 and the Central Test Area	MKM Engineers, Inc.	MAY-2005
Revised Draft Final Off-Site Groundwater Record of Decision	URS Corporation	JUN-2005
Revised Draft Final Remedial Design/Remedial Action Work Plan and Sampling & Analysis Plan Addendum Soils OU1	Tetra Tech, Inc.	JUN-2005

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	Title	Author	Date
2005			
	IDA Topographical Survey	Martin & Whitacre Surveyors & Engineers, Inc.	JUL-2005
	Draft Addendum Remedial Action Report for the Fire Training Pit Removal Action Appendix B	Environmental Chemical Corporation	JUL-2005
	Final Remedial Action Report Phase 4 Soil Sites OU1	Shaw Environmental, Inc.	AUG-2005
	Draft Final Addendum Remedial Action Report for the Fire Training Pit	Environmental Chemical Corporation	AUG-2005
	Draft Final 2004-2005 Groundwater Sampling Report	Tetra Tech, Inc.	DEC-2005
	Draft Final Site Safety and Health Plan Remedial Design/Remedial Action Activities	Tetra Tech, Inc.	DEC-2005
2006			
	Draft Final Work Plan for Soil Sampling Line 7 Decontamination and Decommissioning Activities	Tetra Tech, Inc.	JAN-2006
	Draft Final Rev. 1 Brush Creek Surface Water and Sediment Investigation Work Plan OU4	Tetra Tech, Inc.	FEB-2006
	Final Five-Year Review Report	Tetra Tech, Inc.	MAR-2006
	Draft Final Rev. 2 Soil Treatability Test Plan for Bioremediation of Explosives in Trench 7 (CAMU)	Tetra Tech, Inc.	MAR-2006
	Draft Final Rev. 2 Work Plan for Supplemental Remedial Investigation OU4	Tetra Tech, Inc.	MAY-2006
	Final Operation and Maintenance Manual for Brush Creek Point Source Control Treatment System	Tetra Tech, Inc.	JUN-2006
	Final ESD for Deletion of Radiological Contaminants from Interim Record of Decision (IROD) Soils OU1	Tetra Tech, Inc.	JUN-2006
	Final Treatability Study Results for In Situ Enhanced Degradation of Off-Site Groundwater	Tetra Tech, Inc.	AUG-2006
	Final Comprehensive (Brush Creek, Spring Creek, Long Creek, and Skunk River) Watersheds Evaluation and Supplemental Data Collection Work Plan	Tetra Tech, Inc.	DEC-2006
2007			
	Final Focused Feasibility Study for Trench 6, Trench 7, and the Cap Extension Area of the Inert Disposal Area Operable Unit 4	Tetra Tech, Inc.	JAN-2007
	Proposed Plan for Trench 6, Trench 7, and the Cap Extension Area of the Inert Disposal Area	Tetra Tech, Inc.	MAY-2007
	Draft Final Excavation Plan for Remedial Action for Phases 5, 7, and 8 of OU1	Tetra Tech, Inc.	JUL-2007
	Concentration Trends for Selected Wells and Parameters	Tetra Tech, Inc.	AUG-2007
2008			
	Work Plan for Unexploded Ordnance (UXO) Support Work Site Investigation BLDG 600-84	PA Weber, LC	JAN-2008
	Final Report for Unexploded Ordnance (UXO) Scan Work BLDG 600-84	PA Weber, LC	JAN-2008
	ESD for the Interim Action Record of Decision (IROD) Soils OU1 - Addition of Environmental Protectiveness to the Remedy and Transfer of Sites from OU4 to OU1	Tetra Tech, Inc.	JUN-2008
	Progress Report: Evaluation of Phase 1 and Phase 2 Brush Creek Sediment and Surface Water Data and Recommendations for Phase 3 Sampling in Brush Creek	Tetra Tech	JUL-2008

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	Title	Author	Date
2008			
	Draft Final Rev. 1 Interim Action Record of Decision for Trench 6, Trench 7, and the Cap Extension Area of the Inert Disposal Area in Soils OU4	Tetra Tech	SEP-2008
2009			
	Final Operation and Maintenance Plan for IDA, Line 1 Impoundment, and Line 800 Lagoon	Tetra Tech	FEB-2009
	Technical Memorandum Offsite Brush Creek Supplemental Surface Water and Groundwater Sampling	Tetra Tech	FEB-2009
	Final 2006 Groundwater Sampling Report	Tetra Tech	FEB-2009
	Final 2007 Groundwater Sampling Report	Tetra Tech	FEB-2009
	Final Technical Memorandum Full-Scale Treatability Study for In Situ Biodegradation of On-Post Groundwater	Tetra Tech	FEB-2009
	Final Operations and Maintenance Optimization Plan at the Inert Disposal Area, Line 1 Impoundment, and Line 800 Lagoon	Tetra Tech	FEB-2009
	Final Technical Memorandum Cesium Source Evaluation	Tetra Tech	FEB-2009
	Status Report for Soil Chemical Treatment, Inert Disposal Area	Tetra Tech	MAR-2009
	Final Remedial Design/Remedial Action Work Plan for Offsite Groundwater	Tetra Tech	APR-2009
	Final Remedial Action Work Plan for Closure of the Cap Extension Area (CEA)	Tetra Tech	APR-2009
	Final Construction QA/QC Plan (Attachment 1 to the Remedial Action Work Plan for Closure of the CEA)	Tetra Tech	MAY-2009
	Technical Memorandum Offsite Brush Creek Supplemental Surface Water and Groundwater Results Collected March/April 2009	Tetra Tech	JUN-2009
	Final Brush Creek Point Source Control Treatment System Report	Tetra Tech	JUN-2009
	Draft Final Rev. 2 OU4 Supplemental Remedial Investigation	Tetra Tech	SEP-2009
	Final ESD for the Final Record of Decision Soils OU1 Change of Primary Treatment Technology from Biological to Alkaline Hydrolysis Chemical Treatment	Tetra Tech	SEP-2009
	Final Technical Memorandum for Soil Treatment Results for Alkaline Hydrolysis in Trench 6 Inert Disposal Area	Tetra Tech	NOV-2009
	Draft Final Offsite Groundwater Remediation Progress Report One (October 2007-February 2008)	Tetra Tech	NOV-2009
	Final Offsite Groundwater Remediation Progress Report Two (February 2008-October 2008)	Tetra Tech	NOV-2009
2010			
	Final Remedial Action Report for Biological Soil Treatment at the Inert Disposal Area	Tetra Tech	JAN-2010
	Final Remedial Action Completion Report for OU1 Soils Phase 5, 7, and 8 Sites and Installation-wide Ecological Evaluation	Tetra Tech	SEP-2010
	Draft Final Rev. 1 Construction and Management Plan for the 40mm Test Range	American Ordnance	NOV-2010
2011			

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	Title	Author	Date
2011			
	Final Five-Year Review Report	Tetra Tech	MAR-2011
	Final ESD for the Final Record of Decision Soils OU1 Addition of Soil Volume, Site-specific Remedial Goal For Barium, and Off-site Disposal of Contaminated Soil	Tetra Tech	MAR-2011
	Final Work Plan for Supplemental Remedial Investigation of Groundwater and Surface Water at Line 1	Tetra Tech	MAY-2011
	Final Community Relations Plan Update	Tetra Tech	JUL-2011
	Final OU4 RACR Volume 1 Capping of the Cap Extension Area	Tetra Tech	JUL-2011
	Final OU4 RACR Volume 3 Soil Treatment Activities	Tetra Tech	JUL-2011
	Final Off-site Groundwater Annual Report and Sampling and Analysis Plan	Tetra Tech	AUG-2011
	Final Rev. 3 Supplemental Remedial Investigation Operable Unit 7	Tetra Tech	AUG-2011
	Final Remedial Design/Remedial Action Work Plan for Capping of Trench 6, The Removal of Trench 7 and the Removal of Sediment Ponds 6 and 7 (Includes the Construction Quality Assurance/Quality Control Plan)	Tetra Tech	AUG-2011
2012			
	Final Offsite Groundwater Annual Report and Sampling and Analysis Plan	Tetra Tech	JUL-2012
	Follow-up Report to the Five-Year Review Report	Tetra Tech	JUL-2012
	Final OU3 Offsite Groundwater Annual Report and Sampling and Analysis Plan	Tetra Tech	JUL-2012
	Final OU4 RACR Vol 2 Parts 1 of 3, 2 of 3 and 3 of 3, Capping of Trench 6 and the Removal of Trench 7	Tetra Tech	OCT-2012
2013			
	Final OU4 Remedial Action Completion Report (OU4 RACR) Volume 4 - Land Use Controls, Long-Term Monitoring, and Operation and Maintenance Plan for the Inert Disposal Area (IDA)	Tetra Tech	JAN-2013
	Final OU4 Remedial Action Completion Report (OU4 RACR) Volume 5 - Removal of Sediment Ponds CEA, 6 and 7	Tetra Tech	FEB-2013
	Final RCRA Facility Investigation Work Plan for Groundwater at Contaminated Clothing Laundry	Tetra Tech	MAR-2013
	Revised Draft Final OU9 Work Plan Remedial Investigation of Construction Debris Sites CC-IAAP-01 and CC-IAAP-02	PIKA International, Inc.	MAY-2013
	Final OU9 Work Plan Remedial Investigation for Construction Debris Sites CC-IAAP-01 and CC-IAAP-02	PIKA International, Inc.	MAY-2013
	Final OU7 Work Plan for Feasibility Study Supplemental Data Collection	Tetra Tech	SEP-2013
2014			
	Final OU9 Remedial Investigation of Construction Debris Sites CC-IAAP-01 and CC-IAAP-02	PIKA International, Inc.	MAR-2014
	Final OU3 Technical Memorandum for Offsite Brush Creek Surface Water Update	Tetra Tech	JUN-2014
	Final OU9 Focused Feasibility Study Report for	PIKA International, Inc.	AUG-2014

IRP Previous Studies

	Title	Author	Date
2014			
	Construction Debris Sites CC-IAAP-001 and CC-IAAP-002		
2015			
	Final OU9 Proposed Plan	PIKA International, Inc.	JAN-2015
	Final OU9 Meeting Minutes	PIKA International, Inc.	FEB-2015

IOWA ARMY AMMUNITION PLANT

Installation Restoration Program

Site Descriptions

Site ID: IAAP-002
Site Name: LINE 2 AMMO LAP(ARTILLERY/SHAPE)

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199605
RD	200406	200611
RA(C)	200406	200709
LTM	200709	204509

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The Installation Restoration Program (IRP) site consists of the soil contamination from past munitions production. Any contamination from current activities will be addressed under compliance [non-Environmental Restoration, Army (ER,A) funding].

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim soil ROD requires the removal of an estimated 1,950 cubic yards (cy) of soil contaminated with metals and explosives to be taken to the IDA (IAAP-020) and sorted. Per the final ROD, this soil was treated and placed in Trench 6 or underneath the overall cap depending upon cumulative risk levels.

Please note that not all contaminated soil was removed due to inaccessibility or the threat to structural integrity of production buildings. Information on contamination left in place may be found in the remedial action completion report (RACR).

Only installation operational controls incorporated as best management practices such as dig notices and National Environmental Policy Act (NEPA) apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or land use controls (LUC) are required per the ROD; however, long-term management (LTM), which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above unlimited use/unrestricted exposure (UU/UE) remains.

Site ID: IAAP-002G
Site Name: LINE 2 AMMO LAP - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This IRP site consists of groundwater contamination from past munitions production. Any contamination from current activities will be addressed under CC (non-ER,A funding or existing operating contract). The past contamination resulted from the practice of washing spilled explosives from floors and equipment, from spillages resulting from sump failures, and operational effluent.

Trinitrotoluene (TNT) and cyclotrimethylenetrinitramine (RDX) in concentrations greater than 2,500 part per billion (ppb) have been found in the groundwater in shallow localized plumes within 30 feet (ft) of the ground surface.

In 1991 the PA/SI was completed and in May 1996 an initial RI was completed. In 2003, a supplemental RI was completed to fill groundwater data gaps found in the May 1996 RI. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. In 2005, treatability studies were completed. OU-6 FS is currently underway.

This site was separated from IAAP-002 to better manage groundwater cleanup and allow clearer reporting for phase completions and funding allocation.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-003
Site Name: LINE 3 AMMO LAP (ARTILLERY)

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Radionuclides, Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199105
RI/FS	199012	199605
RD	200408	200611
RA(C)	200406	200709
LTM	200709	204509

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The IRP site consists of the contamination from past munitions production. Any contamination from current activities will be addressed under compliance (non-ER,A funding). The practice during the early years of production was to dispose of wastewater at the Line 800 Pinkwater Lagoon. This line was upgraded to include self-contained Pinkwater reroute systems in July 1995 and September 1998.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim ROD requires the removal of an estimated 3,500 cy contaminated with metals, explosives and SVOCs. This soil was excavated and taken to the IDA (IAAP-020) and sorted by contaminant level and type.

Per the final ROD, this soil was treated and placed in Trench 6 or underneath the overall cap depending upon cumulative risk levels.

Please note that not all contaminated soil was removed due to inaccessibility or the threat to structural integrity of production buildings. Information on contamination left in place may be found in the RACR.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-003G
Site Name: LINE 3 AMMO LAP - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

RDX in low concentrations has been found in the groundwater in a shallow localized plume within 30 ft of the ground surface. Recent data shows a downward trend in groundwater concentrations.

In 1991 the PA/SI was completed and in May 1996 an initial RI was completed. In 2003, a supplemental remedial investigation (SRI) was completed to fill groundwater data gaps found in the May 1996 RI. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. In 2005, treatability studies were completed. OU-6 FS is currently underway.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit-strategy includes preparation of a risk based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-004
Site Name: LINE 3A AMMO LAP (ARTILLERY)

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199605
RD	200408	200611
RA(C)	200406	200709
LTM	200709	204509

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The IRP site consists of the contamination from past munitions production. Any contamination from current activities will be addressed under compliance (non-ER,A funding). This line was upgraded to include a self-contained Pinkwater Reroute System in December 1996.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim ROD requires the removal of soil contaminate with explosives and metals. This soil was excavated and taken to the IDA (IAAP-020), and sorted by contaminant level and type.

Per the Final ROD, this soil was treated and placed in Trench 6 or underneath the overall cap depending upon cumulative risk levels.

Please note that not all contaminated soil was removed due to inaccessibility or the threat to structural integrity of production buildings. Information on contamination left in place may be found in the RACR.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-004G
Site Name: LINE 3A AMMO LAP - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199105
RI/FS	200406	201510

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This IRP site consists of the groundwater contamination from past munitions production. Any contamination from current activities will be addressed under CC (non-ER,A) funding. In December 1996 this line was upgraded to include a self-contained Pinkwater reroute system.

Two isolated, shallow plumes (RDX, low level) have been identified.

The PA/SI was completed in 1991 and in May 1996 an initial RI was completed. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. In 2005, treatability studies were completed. OU-6 FS is currently underway.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-005
Site Name: LINE 4A AND 4B AMMO ASSEMBLY

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	200101
RD	200209	200305
RA(C)	200305	200508
LTM	200508	204509

RIP Date: N/A

RC Date: 200508

SITE DESCRIPTION

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim soil ROD requires the removal of explosives contaminated soil. However, sampling during RD could not recreate RI data. Therefore, the FRA report for Phase V soils indicates that no soil removal was necessary.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-005G

Site Name: LINE 4A/4B AMMO ASSEMBLY GROUNDATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The IRP will address groundwater under OU-6. Preparation of the FS is currently underway. Phase schedule is tracked via this site. Funding requirements are tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-006
Site Name: LINE 5A AND 5B AMMO ASSEMBLY

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199808
RD	199804	199808
RA(C)	199808	199911
LTM	199911	204509

RIP Date: N/A

RC Date: 199911

SITE DESCRIPTION

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim soil ROD requires the removal of soil contaminated with metals and explosives to be taken to the IDA (IAAP-020) and sorted. Per the final ROD, this soil was treated and placed in Trench 6 or underneath the overall cap depending upon cumulative risk levels.

Please note that not all contaminated soil was removed due to inaccessibility or the threat to structural integrity of production buildings. Information on contamination left in place may be found in the RACR.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-006G
Site Name: LINE 5A/5B AMMO ASSMBLY GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

Groundwater and surface water is being addressed as part of the FS under OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-007
Site Name: LINE 6 AMMO PRODUCTION(DETONATOR)

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	197803	199105
SI	197803	199108
RI/FS	199012	200001
RD	200206	200611
RA(C)	200406	200709
LTM	200709	204509

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

The IRP site only consists of the soil contamination from past munitions production. Any contamination from current or future activities will be addressed under compliance (non-ER,A funding).

The primary waste stream was related to the production of detonators and included lead azide, lead styphnate, tetracene, RDX, barium nitrate and mercury fulminate. Treatment of black powder was performed in Building 6-68 as a Resource Conservation and Recovery Act (RCRA) permitted unit. This unit underwent RCRA closure in 1995 and will no longer be maintained or used by the Army (modified caretaker status). As part of the RCRA closure, 800 cy of contaminated soil were removed in 1994.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim ROD requires the removal of soil contaminated with metals that was not addressed under the RCRA closure. This soil was excavated and taken to the IDA (IAAP-020) and sorted by contaminant level and type. The principal concern at this site is the potential for surface runoff to migrate to nearby streams, which in turn recharge groundwater off-post. Groundwater at the site shows no significant contamination.

During the historical site assessment, it was determined there was a potential UXO concern at this site. A geophysical density survey for MEC was performed. The MEC density survey was performed using an electromagnetic metal detector to a depth of 4 ft below ground surface (bgs).

MEC avoidance procedures should be used during any sampling and clearance is required prior to any large scale soil removal.

The Army has determined that some facilities at this line are excess and will pursue non-ER,A funding for building demolition and debris removal. Additional evaluation of soil beneath the slabs will be required after the demolition.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply for soil actions.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UUUE remains. This applies only to soils being addressed by the IRP.

Site ID: IAAP-007G
Site Name: LINE 6 AMMO PRODUCTION GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This IRP site consists of the contamination from past munitions production.

The primary waste stream was related to the production of detonators and included lead azide, lead styphnate, tetracene, RDX, barium nitrate and mercury fulminate. Treatment of black powder was performed in Building 6-68 as a RCRA permitted unit. This unit underwent RCRA closure in 1995 and will no longer be maintained or used by the Army (modified caretaker status). As part of the RCRA closure, 800 cy of contaminated soil were removed in 1994.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim ROD requires the removal of approximately 445 cy of contaminated (metals) soil that was not addressed under the RCRA closure. This soil was excavated and taken to the IDA (IAAP-020). There it was sorted by contaminant level and type. The principal concern at this site is the potential for surface runoff to migrate to nearby streams, which in turn recharge groundwater off-post. Groundwater at the site shows no significant contamination.

During the historical site assessment, it was determined there was a potential UXO concern at this site. A geophysical density survey for MEC was performed. The MEC density survey was performed using an electromagnetic metal detector to a depth of 4 ft bgs.

MEC avoidance procedures should be used during any sampling and clearance is required prior to any large scale soil removal. The Army has determined that the facilities at this line are excess and will pursue non-ER,A funding for building demolition and debris removal. Additional evaluation of soil beneath the slabs will be required after the demolition.

AEDB-R reflects this site as no further action (NFA).

Groundwater is addressed in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy. LTM, which includes LUCs and five-year reviews, will be required for a rolling 30 years.

Site ID: IAAP-008G
Site Name: LINE 7 AMMO LAP GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The IRP site consists of the contamination from past production.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. No contaminants above action levels were found.

The Army determined that the facilities were excess and the entire line was deconstructed in FY06 under the building demolition and debris removal program as documented in the decontamination and demolition report.

Groundwater and surface water will be evaluated in the OU-6 on-site groundwater (former OU-3) FS, which is underway.

Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-009
Site Name: LINE 8 AMMO LAP(FUZE/ROCKET)

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	200001
RD	200209	200309
RA(C)	200305	200508
LTM	200508	204509

RIP Date: N/A

RC Date: 200508

SITE DESCRIPTION

The IRP site consists of the soil contamination from past munitions production. Any contamination from current or future activities will be addressed under compliance (non-ER,A funding).

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim ROD required the removal of lead-contaminated soil; however, this site did not require cleanup to industrial remedial action (operations) [RA(O)] as no contamination was found above action levels as documented in the Phase V Soil Remedial Action Report dated August 2005.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-009G
Site Name: LINE 8 AMMO LAP GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The IRP site addresses the groundwater and surface water contamination from past munitions production. Any contamination from current or future activities will be addressed under compliance (non-ER,A funding).

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. The interim ROD required the removal of lead-contaminated soil; however, this site did not require cleanup to industrial RAOs as no contamination was found above action levels as documented in the Phase V Soil Remedial Action Report dated August 2005.

Groundwater and surface water is being addressed as part of the FS under OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-010
Site Name: LINE 9 AMMO LAP (MINE)

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199605
RD	200209	200309
RA(C)	200305	200508
LTM	200508	204509

RIP Date: N/A

RC Date: 200508

SITE DESCRIPTION

In 1991 the PA/SI was completed and in May 1996 an initial RI was completed. Soil contaminated with explosives and metals was removed and disposed of in the IDA (IAAP-020) as documented in the OU-1 Phase V Soil Remedial Action Report dated August 2005.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-010G
Site Name: LINE 9 AMMO LAP - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

In 1991 the PA/SI was completed and in May 1996 an initial RI was completed. In 2003, an SRI was completed to fill groundwater data gaps found in the May 1996 RI. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. In 2005, treatability studies were completed. OU-6 FS is currently underway.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-012
Site Name: EXPLOSIVE DISPOSAL AREA (EAST BURN PADS)

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199706
RD	199704	199711
RA(C)	199807	199810
LTM	199810	204509

RIP Date: N/A

RC Date: 199810

SITE DESCRIPTION

The explosive disposal area consisted of eight raised earthen burning pads enclosed in a fenced area of approximately 12 acres. Activities included OB of explosives-contaminated metals, propellant, explosives and pyrotechnic contaminated materials. Each pad was bermed on three sides to restrict horizontal movement of metal projectiles. The pads were in operation from 1941 until 1982.

The PA/SI was completed in 1991 and an initial RI was completed in May 1996. The interim ROD required the removal of contaminated soil and 8,270 cy of soil was removed in 1998 (funded as an IRA). This soil was taken to the IDA (IAAP-020) and sorted by contaminant level and type. Soil excavation is complete.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply. No further IRP action is expected to be taken as this is an active production area.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-012G
Site Name: EDA/EAST BURN PADS - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The explosive disposal area consisted of eight raised earthen burning pads enclosed in a fenced area of approximately 12 acres. Activities included OB of explosives-contaminated metals, propellant, explosives and pyrotechnic contaminated materials. Each pad was bermed on three sides to restrict horizontal movement of metal projectiles. The pads were in operation from 1941 until 1982, when the explosive waste incinerator (EWI) was built.

The PA/SI was completed in 1991 and an initial RI was completed in May 1996. In 2003, an SRI was completed to fill groundwater data gaps found in the May 1996 RI. Low levels of explosives and VOCs have been found in shallow groundwater and upper bedrock 30 ft bgs. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. OU-6 FS is currently underway.

Phase progress will be tracked in this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-013
Site Name: INCENDIARY DISPOSAL AREA (EAST YARD D)

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200012	200710
RD	200408	200710
RA(C)	200408	200710
LTM	200710	204509

RIP Date: N/A

RC Date: 200710

SITE DESCRIPTION

This site was used for incendiary material burial during the mid-1940s. The exact size, location, and material buried at this site cannot be determined because there are no records of this activity ever being performed at the IAAAP. Some indications do exist that magnesium may have been the material disposed of at this site. Previous samples taken during the SI may not have been appropriately located.

This site was expanded to include a cratered area. A fence with "Danger" signs intersects the cratered area.

Additional soil and sediment samples were collected in 2004 and documented in the draft final report for the soil data collection. Elevated levels of beryllium were detected above the background levels in multi-incremental shallow soil as determined in the OU-1 ROD, as well as elevated levels of lead detected in discrete shallow soil.

Soil was excavated at OU-1 and transported to the IDA (IAAP-020) for treatment and disposal. This site is RC for soils media under OU-1. No LTM or LUCs are expected under OU-1. LUC and LTM will be addressed under OU-5 (MMRP).

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains. This applies only to soils being addressed by the IRP.

Site ID: IAAP-013G
Site Name: INCENDIARY DISPOSAL AREA GROUNDWATR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site was used for incendiary material burial during the mid-1940s. It was believed to be small (approximately 40 ft x 60 ft) and surrounded by a barbed wire fence. The exact size, location, and material buried at this site cannot be determined because there are no records of this activity ever being performed at the IAAAP. Some indications do exist that magnesium may have been the material disposed of at this site. Previous samples taken during the SI may not have been appropriately located.

IAAP-013 has been expanded to include a cratered area. A fence with "Danger" signs intersects the cratered area.

Additional soil and sediment samples were collected in 2004 and documented in the draft final report for the soil data collection. Elevated levels of beryllium were detected above the background levels in multi-incremental shallow soil as determined in the OU-1 ROD, as well as elevated levels of lead detected in discrete shallow soil. This site was identified within the footprint of the east training area/land navigation range, which is considered inactive by the Army.

A draft final OU-7 SRI Revision 3 was submitted to the USEPA for review in August 2011. This document remains under dispute with USEPA. Draft final OU-7 FS for surface water, and sediment is currently in dispute also.

Groundwater is being addressed as part of the FS under OU-6.

Surface water and sediment are being addressed at OU-7 as part of the FS. The Army and the USEPA are currently working through informal dispute.

Phase progress will be tracked in this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-014G
Site Name: BOX CAR UNLOADING AREA GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site addresses groundwater and surface water at two areas. Minute amounts of TNT and RDX may have come into contact with the soil in the area.

This site was evaluated in the comprehensive watersheds evaluation and supplemental data collection work plan, and based on the results of the investigation, there is no indication that contamination is present at the site.

This site remains open for groundwater evaluation in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-015
Site Name: OLD FLY ASH WASTE PILE

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Sediment, Soil, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site addresses soil, surface water, and sediment as part of OU-7. Ash was placed directly on the ground surface. Sludge from the sewage disposal plant was placed on this site once or twice a year since the early-1940s. It is unclear when this practice stopped. There is no record of the amounts of ash or sludge placed here. The majority of the surface of the Fly Ash Waste Pile is vegetated. Surface runoff flows into Brush Creek.

The PA/SI was completed in 1991, and the limited RI was completed in May 1996.

Ash has fallen into Brush Creek. Uncontrolled dumping of vegetation and solid waste, including tires, bricks, and five-gallon cans, was found at this site in May 1999. This material was removed shortly after discovery.

Additional soil, fly ash, sediment and groundwater samples were collected in 2004 and documented in the draft final report for the soil data collection.

The Army and the USEPA are working through informal dispute regarding the OU-7 FS.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The Army and the USEPA are executing dispute resolution steps for the draft final OU-7 FS for soil, surface water and sediment. Groundwater is addressed in OU-6.

Site ID: IAAP-015G
Site Name: OLD FLY ASH WASTE PILE GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

Groundwater at this site is addressed under OU-6. Ash was placed directly on the ground surface. Sludge from the sewage disposal plant was placed on this site once or twice a year since the early-1940s. It is unclear when this practice stopped. There is no record of the amounts of ash or sludge placed here.

The majority of the surface of the Fly Ash Waste Pile is vegetated. Surface runoff flows into Brush Creek.

The PA/SI was completed in 1991, and the limited RI was completed in May 1996. Additional soil, fly ash, sediment and groundwater samples were collected in 2004.

Additional groundwater sampling is planned as part of OU-6 in response to the USEPA comments regarding the OU-7 informal dispute.

Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-016
Site Name: LINE 1 FORMER WASTEWATER IMPOUNDMENT

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199610
RA(C)	199610	199709
LTM	199710	204509

RIP Date: N/A

RC Date: 199709

SITE DESCRIPTION

This site consists of the Line 1 Former Wastewater Impoundment and upgradient settling basins. From 1948 to 1957 this impoundment received large volumes of discharge. The wastes included TNT, coal pile runoff, and condensate from the coal-fired power plant. Fly ash usually was added to the impoundment liquid to absorb the explosives and reduce the color. In 1991 RI work for the Impoundment area was completed.

In 1996, the action memo was approved. A contaminated soils IRA was completed during 1997 when 8,270 cy of explosives-contaminated soils were excavated from this area. The excavated soils contained greater than 3,900 pounds of explosives. This soil was taken to the IDA (IAAP-020) where it was separated by level of contamination. Approximately 1,000 cy of higher contaminated soil was placed in Trench 7 and was treated as required by the ROD. The remainder was capped at the IDA without treatment.

This site has been converted into wetlands. Native plants containing the nitroreductase enzyme are being used to phytoremediate the surface water. Low levels of residual explosives remain in surface water within the impoundment; those greater than 2 ppb are being treated with granular activated carbon prior to discharge.

The FUSRAP PA identified this area as requiring additional investigation. In August 2004 the FUSRAP conducted a screening survey of this site to determine if radiological contaminants from the Atomic Energy Commission activities are present in the soil. PAs of all screening results indicate no radiological contamination present at this area; however, groundwater contamination was discovered in 2004.

Recent groundwater and soil sampling indicate there may be soil impacted with explosives at the southern end of the site. The levels indicate remediation is probable.

Only installation operational controls incorporated as best management practices such as dig notices and NEPA apply to this site for soils as of now.

CLEANUP/EXIT STRATEGY

Groundwater investigation at IAAP-0016G, reveals evidence of source contamination in soils that could potentially reopen this site in the future.

No further RA or LUCs are required per the ROD, excluding the new source area; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because

contamination above UU/UE remains.

Site ID: IAAP-016G
Site Name: LINE 1 FORMER IMPOUNDMENT GRNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site consists of the Line 1 Former Wastewater Impoundment and upgradient settling basins. From 1948 to 1957 this impoundment received large volumes of discharge. The wastes included TNT, coal pile runoff, and condensate from the coal-fired power plant. Fly ash usually was added to the impoundment liquid to absorb the explosives and reduce the color. In 1991 RI work for the Impoundment area was completed.

In 1996, the action memo was approved. A contaminated soils IRA was completed during 1997 when 8,270 cy of explosives contaminated soils were excavated from this area. The excavated soils contained greater than 3,900 pounds of explosives. This soil was taken to the IDA (IAAP-020) where it was separated by level of contamination. Approximately 1,000 cy of higher contaminated soil was placed in Trench 7 and was treated as required by the ROD. The remainder was capped at the IDA without treatment.

This site has been converted into wetlands. Native plants containing the nitroreductase enzyme are being used to phytoremediate the surface water. Low levels of residual explosives remain in surface water within the impoundment; those greater than 2 ppb are being treated with granular activated carbon prior to discharge.

The FUSRAP PA identified this area as requiring additional investigation. In August 2004 the FUSRAP conducted a screening survey of this site to determine if radiological contaminants from Atomic Energy Commission activities are present in the soil. PAs of all screening results indicate no radiological contamination present at this area; however, groundwater contamination was discovered in 2004.

Groundwater is being address as part of the FS under OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-017
Site Name: PESTICIDE PIT

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Herbicides, Metals, Pesticides

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199105
RI/FS	200406	201910
IRA	199503	199606

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The Pesticide Pit was in operation between 1968 and 1974 for the disposal of small quantities of insecticides and herbicides. The School House is currently vacant and was fenced for safety reasons. The Pesticide Pit was a small plywood structure lined with limestone and polyester resin geomembrane; however, the integrity of the structure that contained these wastes was questionable. The pit was capped with clay of unknown thickness during the late-1970s to early-1980s.

The PA/SI was completed in 1991, and the RI in May 1996.

In 1995, based on preliminary RI results, 144 cy of soils were excavated and the site was backfilled with pea gravel and clean soil.

Follow-on groundwater sampling and analyses indicated all contaminants were below federal action levels. IRAs were completed in 1996. The soils were transported to an off-site incinerator for disposal.

This action has not been finalized in a ROD; however, NFA is expected. The Army anticipates that this site will be included on the OU-7 ROD.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required; however, LTM, which includes internal installation specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-017G
Site Name: PESTICIDE PIT GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site addresses groundwater. The Pesticide Pit was in operation between 1968 and 1974 for the disposal of small quantities of insecticides and herbicides. The School House is currently vacant and was fenced for safety reasons. The Pesticide Pit was a small plywood structure lined with limestone and polyester resin geomembrane; however, the integrity of the structure that contained these wastes was questionable. The pit was capped with clay of unknown thickness during the late-1970s to early-1980s.

The PA/SI was completed in 1991, and the RI in May 1996. Spring 2001 and June 2004 groundwater sampling indicated slightly elevated levels of chromium.

Groundwater is being addressed as part of the FS under OU-6. The OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-018
Site Name: POSSIBLE DEMOLITION SITE(SOUTH YARD G)

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200107	200710
RD	200408	200710
RA(C)	200408	200710
LTM	200710	204509

RIP Date: N/A

RC Date: 200710

SITE DESCRIPTION

This site addresses soils, surface water, and sediment. It was apparently used during the 1940s and possibly into the early-1950s as a demolition area for ammunition items.

The SI sampling was completed in 1991 and no significant contamination was found. This site was larger than thought, and previous samples were not representative of the site conditions.

Contaminants listed in the PA for this site included white and red phosphorus, as well as explosives and metals.

Additional soil samples were collected in 2004 and documented in the draft final report for the soil data collection. Elevated levels of TNT and lead were found in multi-incremental shallow soil above background levels as determined in the OU-1 ROD.

Soil was excavated and transported to the IDA for treatment and disposal.

Site OU-1 is RC for soils media under OU-1. No LTM or LUCs are necessary under OU-1 as these will be addressed via OU-5 (MMRP).

CLEANUP/EXIT STRATEGY

Site OU-1 is RC for soils media under OU-1. No LTM or LUCs are necessary under OU-1 as these will be addressed via OU-5 (MMRP). Therefore, the site is RC under IRP and no cleanup or exit strategy applies.

Site ID: IAAP-018G
Site Name: POSSIBLE DEMOLITION SITE GRNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This possible demolition site (PDS) munitions response site (MRS) was probably used during the 1940s and early-1950s as a demolition area.

The SI sampling was completed in 1991 and no significant contamination was found.

This site was previously included in OU-7 (former OU-4) for soils, but was transferred to OU-1 as documented in the Final Explanation of Significant Differences (ESD) for Addition of Environmental Protectiveness to the Remedy and Transfer of Sites from OU-4 to OU-1 dated June 2008. Only surface water and sediment remain under OU-7 for this site. Groundwater is addressed in OU-6.

The site is currently addressed under OU-5 for MEC; OU-6 for groundwater, and OU-7 for surface water and sediment.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-020
Site Name: INERT DISPOSAL AREA

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Radionuclides, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	197803	199105
SI	197803	199105
RI/FS	199012	201910
RD	201911	202111
RA(C)	202108	202311
RA(O)	202309	202511
LTM	202512	205512

RIP Date: 202311

RC Date: 202511

SITE DESCRIPTION

The IDA once included an inert (sanitary) landfill, a bldg, a metal salvage operation, the former Blue Sludge Lagoon, wastewater sludge drying bed, cap extension area (CEA), and an earthen holding area formerly used to store sludge.

Soils from other sites are transported to the IDA for segregation according to health risk. Soils classified as a high risk were placed in the corrective action management unit (CAMU) (Trench 7) for treatment. The CAMU was designated by the USEPA in March 1996. Soils classified as a medium health risk are placed in a lined cell that meet RCRA standards (Trench 6). Soils that are classified as a low health risk are placed underneath the overall cap at the IDA.

The inert landfill was in operation from 1941-1992. It employed the trench-and-fill operation technique. Trenches 1-5 were filled with unsalvageable or unrecoverable materials (cafeteria and residential garbage, broken pallets, plastic, and scrap wood/lumber, paper, cardboard, etc). Ash from OB and incineration was also placed in the landfill. In 1980 a Part A permit was received for the inert landfill and the Blue Sludge Lagoon. Interim status was granted that year. During 1997 a low permeability synthetic cap was placed over Trenches 1-5 (approximately 17 acres) and the area was seeded.

In 1997 the blue sludge was excavated from this drying bed and deposited into Trench 6. In 1997 explosives- and metals-contaminated soils from a 1993-1994 multi-site sump removal project were placed in Trench 6.

The north end of Trench 5 contains special waste, such as ash from the CWP (IAAP-024), EWI (IAAP-025), and OB of explosives and explosives-contaminated wastes.

In April 1988 this area was capped and the RCRA closure plan completed. In February 1997 the plan was amended and during routine sampling radionuclides were found in groundwater, but were determined to be within normal background levels and within safe limits.

In 1996 IRAs (soil removal and capping) at the IDA, Former Line 1 Impoundment Area (IAAP-016), and the Line 800 Lagoon (IAAP-044) were completed in 1997.

Soil and debris from the burning grounds was placed underneath the inert landfill cap or in Trench 6, whichever was appropriate, based upon contamination levels. In 1997, the cap construction was completed over Trenches 1-5. Soils from the East Burn Pads, North Burn Pads, North Burn Pads Landfill and Fire Training Pit were placed into Trenches 6 or 7 depending upon risk levels. Volatile organic compounds (VOC)-contaminated soils from the Fire Training Pit were removed and treated via a low temperature thermal desorption (LTTD) unit at Trench 6. In March 1996 Trench 7 was designated as a CAMU by the USEPA.

In FY02, approximately 6,000 cy of soil contaminated with explosives and metals and stored in the CAMU were treated and segregated per the interim soil ROD.

Site ID: IAAP-020
Site Name: INERT DISPOSAL AREA

All soils were treated with alkaline hydrolysis per OU1 Final ROD ESD dated September 2009; CAMU liner was removed and disposed of in Trench 6. Trench 6 was capped in 2011. The RACR is being prepared.

Groundwater monitoring and LTM costs associated with the following sites are captured in this site: CC-001G, CC-01, CC-IAAP-001, CC-IAAP-002, IAAP-002, IAAP-002G, IAAP-003, IAAP-003G, IAAP-004, IAAP-004G, IAAP-005, IAAP-005G, IAAP-006, IAAP-006G, IAAP-007, IAAP-007G, IAAP-008, IAAP-008G, IAAP-009, IAAP-009G, IAAP-010, IAAP-010G, IAAP-012, IAAP-012G, IAAP-013, IAAP-013G, IAAP-014, IAAP-014G, IAAP-015, IAAP-015G, IAAP-016, IAAP-016G, IAAP-017, IAAP-017G, IAAP-018, IAAP-018G, IAAP-020, IAAP-020G, IAAP-022, IAAP-022G, IAAP-025, IAAP-025G, IAAP-028, IAAP-028G, IAAP-030, IAAP-030G, IAAP-031, IAAP-031G, IAAP-032, IAAP-032G, IAAP-036, IAAP-036G, IAAP-037, IAAP-037G, IAAP-038, IAAP-038G, IAAP-039, IAAP-039G, IAAP-040, IAAP-040G, IAAP-041, IAAP-041G, IAAP-042, IAAP-042G, IAAP-043, IAAP-043G, IAAP-044, IAAP-044G, IAAP-047, IAAP-047G.

To date, approximately 209,060 cy of soil have been taken to the IDA. Of this volume,
- 72,860 cy was placed as random fill under the cap of the inert landfill (i.e., Trenches 1-5);
- 83,434 cy was placed in Trench 6 (i.e., 72,440 cy IRP soil; 10,994 cy FUSRAP soil);
- 15,036 cy was placed in Trench 7 for treatment (i.e., 14,758 cy IRP soil; 278 cy FUSRAP soil); and
- 37,730 cy was placed in the CEA.

The soil volume treated to date includes a total of 37,959 cy. This treated soil includes
- 8,854 cy which has undergone biotreatment for soils,
- 13,005 cy which has undergone metals stabilization,
- 15,448 cy which has undergone chemical treatment for explosives, and
- 652 cy which has undergone LTTD.

A portion of this volume came from FUSRAP screening areas (IAAP-012, IAAP-032, IAAP-036, and IAAP-037). Soils from Trench 7 have been transferred to Trench 6. Some treated soils, such as those treated with LTTD, were sent directly to Trench 6 immediately after treatment.

During the August 2004 radiological screening of the IDA conducted by FUSRAP, one isolated area of radiological contamination was identified. This area was limited to a small object and the soils around the object (approximately 1 square yard). Analysis identified that the object contained Cesium-137. The soil where the object was found originated from remediation activities at the West Burn Pads Area (IAAP-032). The area was sufficiently covered with soil to eliminate exposure. Evaluation of this object was documented in the final technical memorandum for cesium source evaluation dated February 2009.

The CEA was capped in 2009.

An ESD, signed in September 2009, changed the primary remedy for explosive-contaminated soils from biological to chemical treatment. Trench 6 was capped in 2011.

CLEANUP/EXIT STRATEGY

Programmed costs include leachate management and cap maintenance along with OU-1 and OU-4 five-year reviews.

Site ID: IAAP-020G
Site Name: INERT DISPOSAL AREA - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals, Radionuclides, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	197803	199105
SI	197803	199105
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This area once included an inert (sanitary) landfill, a burning ground, a metal salvage operation, the former Blue Sludge Lagoon, a wastewater sludge drying bed, CEA, and an earthen holding area formerly used to store sludge.

The inert landfill was in operation from 1941 to September 1992 and employed the trench and fill operation technique. Trenches 1 through 5 were filled primarily with sanitary landfill materials such as unsalvageable or unrecoverable materials (cafeteria and residential refuse and garbage, broken pallets, plastic, tin cans, and scrap wood/lumber paper, cardboard and asbestos insulation in double-lined plastic bags). Ash from OB and incinerations was also placed in the landfill. In 1980 a Part A permit was received for the inert landfill and the Blue Sludge Lagoon. Interim status was granted that year. In 1984 the lagoon holding area was closed following the transfer of the blue sludge to a concrete-lined sludge drying bed, where it remained until January 1997. The excavated area was backfilled and capped with clay and a vegetative cover was established. In 1997, the blue sludge was excavated from the drying bed and deposited into Trench 6. In 1997 explosives- and metals-contaminated soils from a 1993-1994 multi-site sump removal project were placed in Trench 6. Also during 1997, a low permeability synthetic cap was placed over Trenches 1 through 5 (approximately 17 acres). This area was seeded in 1998.

The north end of Trench 5 contains special waste, such as ash from the CWP (IAAP-024), EWI (IAAP-025), and OB of explosives and explosives-contaminated wastes. In April 1988 this area was capped and the RCRA closure plan was completed. In February 1997 the plan was amended to address sampling issues. In 1997 during routine sampling radionuclides were found in groundwater samples and were determined to be within normal background levels for IAAAP and within safe limits.

In 1994 groundwater monitoring began. Low levels of explosives, VOCs, and metals have been found in shallow groundwater (30 ft bgs). High levels of pentachlorophenol (PCP) have been found in one well.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-022G
Site Name: UNIDENTIFIED SUBSTANCE (OIL) GNDWTR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The unidentified substance thought to be road surfacing oil was discovered on July 16, 1985 (IAG, 1990). The source of the oil spill is thought to have been a leaking railroad tank car (RI/FS Task Order, 1990).

According to the on-site personnel, this area has been covered with approximately 10 ft of fill material which has created a small incline sloping up and away from the railroad track bed. The SI sampling was completed in 1991 and no significant contamination was found.

The site remains open for groundwater evaluation in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-025
Site Name: EXPLOSIVE WASTE INCINERATOR

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	197803	199105
SI	197803	199105
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The EWI contained an adjoining air pollution control system. The site treated explosive wastes, sump scrap, and explosives-contaminated waste solvents. Explosives-contaminated carbon was originally treated in the EWI, but is now recycled. Resultant ash was collected and managed as a hazardous waste. The EWI buildings and facilities underwent RCRA closure, and the incinerator was removed from the installation in 1999.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996. One area (drainage ditch) had a detection of RDX at levels above cleanup criteria that was not addressed by RCRA closure of the EWI. This soil is addressed under OU-7.

The Army and USEPA are currently working through an informal dispute over OU7 FS.

Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The Army and the USEPA are executing dispute resolution steps for the draft final OU-7 FS for soil, surface water, and sediment. Groundwater is addressed in OU-6.

Site ID: IAAP-025G
Site Name: EXPLOSIVE WASTE INCINERATOR GRNDWTR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The EWI contained an adjoining air pollution control system. The site treated explosive wastes, sump scrap, and explosives contaminated waste solvents. Explosives-contaminated carbon was originally treated in the EWI, but is now recycled. Resultant ash was collected and managed as a hazardous waste. The EWI buildings and facilities underwent RCRA closure, and the incinerator was removed from the installation in 1999.

The PA/SI was completed in 1991, and an initial RI was completed in May 1996.

Groundwater and surface water is being addressed as part of the FS under OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-028
Site Name: CONSTRUCTION DEBRIS DISPOSAL AREA

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Pesticides, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site is addressed under OU-7 for soil, surface water, and sediment. Wastes were placed in a ravine with periodic soil cover. Waste included brick, stone, concrete, wire and 55-gallon drums. It is believed that this site was in operation from 1941 to September 1992.

The PA/SI was completed in 1991, and the initial RI was completed in May 1996; no significant contamination was found.

It is believed that unauthorized dumping occurred at this site.

Additional soil and sediment samples were collected in 2004 to help determine the full extent of the site. This information is documented in the draft final report for the soil data collection. No analytes above the background levels as determined in the OU-1 ROD were detected. Material that appeared to be fly ash was encountered at 18 ft bgs.

The Army and the USEPA are currently working through an OU-7 informal dispute resolution.

Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The Army and the USEPA are executing dispute resolution steps for the draft final OU-7 FS for soil, surface water, and sediment. Groundwater is addressed in OU-6.

Site ID: IAAP-028G
Site Name: CONSTRUCTION DEBRIS DISPOSAL GRDWTR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site addresses groundwater under OU-6. Wastes were placed in a ravine with periodic soil cover. Waste included brick, stone, concrete, wire and 55-gallon drums. It is believed that this site was in operation from 1941 to September 1992.

The PA/SI was completed in 1991, and the initial RI was completed in May 1996; no significant contamination was found.

It is believed that unauthorized dumping occurred at this site.

Groundwater is addressed in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-030G
Site Name: FIRING SITE AREA GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Radionuclides

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

In 1947, the IAAAP was selected as the first production facility for manufacturing of high explosives components for weapons under the Atomic Energy Commission.

Portions of the Firing Site were under the control of the Atomic Energy Commission from 1948 to 1974. The Atomic Energy Commission operated Sub-Area FS-12 from December 1965 to December 1973. FS-12 was used for destructive testing of ordnance containing depleted uranium and high explosives. Area FS-12 was surveyed for radioactivity by the Atomic Energy Commission in 1974 and some contaminated soil was shipped off-site to Sheffield, IL in that same year. In May 2001, a survey conducted by FUSRAP detected numerous fragments of depleted uranium. An aerial radiological survey of the entire plant was conducted in October 2002, and detectable emissions from man-made radiological sources were found at Firing Site 12. The IRP PA/SI was completed in 1991, and the RI in May 1996 found radionuclides and metals in soil and groundwater.

A supplemental RI was completed in 2002. FUSRAP performed a PA (published December 2001) of this site and determined it to be a former Atomic Energy Commission area. In July 2002, the USACE designated this area to be under FUSRAP.

Both radiological and non-radiological contamination attributable to former USAEC operations will be addressed by FUSRAP for soils. FUSRAP will complete a supplemental RI for this site. FUSRAP will assume responsibility for cleanup of soils.

This site was transferred to FUSRAP and is considered RC, for the soils media, by the IRP. Groundwater is being addressed as part of OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-031G
Site Name: AMMO BOX CHIPPER DISPOSAL GRNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The pit was reportedly used for a three-month period sometime between 1972 and 1975. Wastes consisted of shredded ammunition boxes treated with the wood preservative pentachlorophenol (PCP).

Investigations conducted during 1997 have not substantiated the former existence of this site. If this site is ever located it will be investigated.

Bis-2-ethylhexylphthalate has been found in groundwater in area of suspected location.

The site remains open for groundwater evaluation in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-032
Site Name: BURN CAGES, BCLF; WEST BURN PADS, WBPLF

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199804
RD	199901	199909
RA(C)	200006	200212
LTM	200212	204509

RIP Date: N/A

RC Date: 200212

SITE DESCRIPTION

Burn cages were used for incineration of mateials. Another small area of soil needs investigation and possible removal. Radiological concerns at this site are to be addressed by the FUSRAP Program.

This site is NFA for soils media under the IRP.

CLEANUP/EXIT STRATEGY

This site is considered RC, for the soils media, under the IRP as documented in the Phase 1 and Phase 3 soil RA Report (north side of road).

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

The south side of the road was designated to FUSRAP in July 2002.

The MEC and MC were addressed under the MMRP as captured in AEDB-R site IAAP-003-R-01.

Site ID: IAAP-032G
Site Name: WEST BURN PAD AREA - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

IAAP-032 (Burn Cages), IAAP-033 (Burn Cage Landfill), IAAP-034 (West Burn Pads), and IAAP-035 [West Burn Pads Landfill (WBPLF)], were incorporated into this one site.

The site was used from 1949 to 1982 when the cages were removed. In 1991, during the SI, metal parts, munitions casings, and staining on the ground surface were observed. Ash generated from the burn operations was disposed in the adjacent landfills. The landfills are heavily vegetated.

Between 1949 and 1982 ash from the Burn Cages and West Burn Pads was disposed at the Burn Cage Landfill and then, between 1950 and 1975, at the WBPLF. The WBPLF also received waste from the East Burn Pads as well as various solid wastes that included sanitary and industrial waste.

This site consists of the contamination from past activities. In 1991 the PA/SI was completed and in May 1996 an initial RI was completed. In 2003, a SRI was completed to fill groundwater data gaps found in the May 1996 RI. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. In 2005, treatability studies were completed. OU-6 FS is currently underway.

After the soil removal was completed in 2000, relatively high levels of explosives and freon were found in the groundwater.

In 2000 low levels of explosives were detected in the creek south of the WBPLF. In 2003 a supplemental RI was completed and in 2004 a groundwater model was created.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-036
Site Name: NORTH BURN PADS (2) (NEAR IAAP-024)

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	199012	200303
LTM	200303	204509

RIP Date: N/A

RC Date: 200303

SITE DESCRIPTION

This site consists of Pads 1-N and 2-N. A 275-gallon diesel fuel station was located at the base of Pad 2-N. Soil excavations were completed in 1999 under soils Phase 1 RA.

This site requires NFA and is considered RC for soils media under the IRP.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-036G
Site Name: NORTH BURN PADS GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The North Burn Pads consists of Pads 1-N and 2-N.

Each pad was operational from 1968 to 1972. A 275-gallon diesel fuel station was located at the base of Pad 2-N. The station had an aboveground tank used to refuel equipment operating in the area.

The PA/SI was completed in 1991, the RI was completed in May 1996 and found metals and small amounts of explosives.

Groundwater monitoring began in 1994 and ended in 2001. The FUSRAP PA identified this area as requiring additional investigation. In August 2004, FUSRAP conducted a screening survey of this site to determine if radiological contaminates from USAEC activities are present in soil. PAs of all screening results indicate no radiological contamination present at this area.

Groundwater is being addressed as part of OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-037
Site Name: NORTH BURN PADS LANDFILL

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199605
RD	199705	199812
RA(C)	199801	199812
LTM	199812	204509

RIP Date: N/A

RC Date: 199812

SITE DESCRIPTION

North Burn Pads Landfill (NBPLF) was used to receive the remnants from the north burn pads; reported to be flashed cans. Contaminated soil from this area was removed in 1998 and segregated by contamination levels into the inert landfill.

This site requires NFA and is considered RC for soils media under the IRP.

CLEANUP/EXIT STRATEGY

Cleanup of this site is documented in the Phase 1 RA report dated October 2000. No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-037G
Site Name: NORTH BURN PADS LANDFILL GRNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

Landfill activities occurred from 1968 to 1972.

A cleanup operation was performed in 1980 during which some of the contents of the landfill were taken to the IDA.

Results from the SI in 1991 did not indicate significant contamination; however, RI work was initiated to fill data gaps. The RI work completed in May 1996 found metals in soil and groundwater. Pre-design sampling in 1997-1998 found high levels of explosives in soil and leachate.

Groundwater monitoring began in 1994.

RDX in concentrations of less than 10 ppb have been found in the groundwater in upper bedrock (30-40 ft bgs).

The FUSRAP PA identified this area as requiring additional investigation. In August 2004, FUSRAP conducted a screening survey of this site to determine if radiological contaminates from USAEC activities are present in soil. PAs of all screening results indicate no radiological contamination present at this area.

Groundwater is being addressed as part of OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-038
Site Name: BUILDING 600-86 SEPTIC SYSTEM

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	199012	199605
LTM	199605	204509

RIP Date: N/A

RC Date: 199605

SITE DESCRIPTION

This area served two known roles since its construction. From 1941 to 1953 it was an analytical laboratory. Prior to that time the building had been used to store RCRA hazardous wastes. The building was removed as part of the facilities reduction program.

This site requires NFA and is considered RC for soils media under the IRP. Costs are captured under IAAP-020.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-038G
Site Name: BUILDING 600-86 SEPTIC SYS GNDWTR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site consists of the contamination from past activities. Any contamination from current and future activities will be addressed with non-ER,A funding.

This building has served in several roles since its construction in 1941.

It was an analytical laboratory from 1941 to 1953. In 1985, two rooms in the building were used to store RCRA hazardous wastes. Room A was used to store spent solvents with a permitted capacity of 2,640 gallons. Room B was used to store waste liquids containing cyanide salts. Both rooms had concrete curbing around the perimeter. Small amounts of solvents that may be contaminated with explosives were accumulated in Room C, then filtered through a carbon filter column before being taken off-site.

The function of the laboratory was to perform drinking water and wastewater analyses, as well as analysis of primer mixes containing lead azide in quantities of 10 to 20 milligrams. The waste from the primer tests was deactivated with ceric ammonium nitrate and the resultant waste solution was disposed of in the Explosive Disposal Area (IAAP-012).

The laboratory building was constructed with its own septic tank and drain. Sometime after 1983, sludge was removed from the septic tank and the tank was filled with sand. The building was torn down under the Facilities Reduction Program in 2006.

Groundwater is being addressed as part of OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-039
Site Name: FIRE TRAINING PIT

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	199012	200409
IRA	199603	200409
LTM	200409	204509

RIP Date: N/A

RC Date: 200409

SITE DESCRIPTION

The Fire Training Pit is an unlined pit. Contaminated soils were removed in 1998. These soils were treated using LTTD and disposed into Trench 6 of the inert landfill in 1999.

Supplemental excavation was completed in 2004.

This site is NFA for soils media under the IRP. Costs are captured under IAAP-020.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-039G
Site Name: FIRE TRAINING PIT - GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201510

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

Formerly, the Fire Training Pit was an unlined pit and was used from 1982 to 1987.

In 1991 the PA/SI was completed and the RI was completed in May 1996. Investigations found localized soil and groundwater contamination consisting of significant quantities of VOCs (including chlorinated solvents), SVOCs, metals, and low levels of dioxins and furans. In 1994 groundwater monitoring began.

High levels of VOCs in concentrations greater than 30 parts per million (ppm) have been found in shallow groundwater and the upper bedrock (30 feet bgs). Groundwater contamination has migrated to the Spring Creek tributary.

In 2003, the SRI was completed and was documented in a remedial alternative analysis document. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed.

In 2005, treatability studies were completed. OU-6 FS is currently underway.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-040
Site Name: ROUNDHOUSE TRANSFORMER STORAGE AREA

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	199012	199807
RD	200206	200308
IRA	199907	200005
RA(C)	200305	200508
LTM	200508	204509

RIP Date: N/A

RC Date: 200508

SITE DESCRIPTION

The Roundhouse Transformer Storage area has been in use since the 1940s to store transformers pending use or disposal. The storage yard is a flat, graded area with crushed stone on a hard base. An area contaminated with explosives was found in 1997. A 1999 characterization sampling found no explosives above action levels. No soils were removed.

This site requires NFA and is considered RC for soils media under the IRP. Costs are captured under IAAP-020.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-040G

Site Name: ROUNDHOUSE TRANSFORMER AREA GRNDWTR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Polychlorinated Biphenyls (PCB)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site consists of contamination from past activities. Any contamination from current and future activities will be addressed with non-ER,A funding.

The area was used since the 1940s to store transformers (which contain PCBs) pending use or disposal; this site is no longer used for PCB storage. Transformers found to contain greater than 50 ppm PCBs were moved to the old storage site. Those transformers having less than 50 ppm PCBs were moved to an outside storage concrete pad and a new storage. The PA/SI was completed in 1991, the RI was completed in May 1996; samples found PCBs and explosives.

Groundwater is being addressed as part of OU-6. OU-6 phase progress will be tracked here and funding will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-041
Site Name: LINE 3A POND

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

This site addresses soil under OU7. Line 3A pond is assumed to be an excavated, unlined pit. The pond area is relatively flat and slopes gently. While some sources conflict on this fact, it is generally believed that this site was excavated and backfilled circa 1959.

The PA/SI was completed in 1991, and the RI was completed in May 1996.

The Army and the USEPA are working through informal dispute resolution for the OU-7 FS.

Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The Army and the USEPA are executing dispute resolution steps for the draft final OU-7 FS. Groundwater is addressed in OU-6.

Site ID: IAAP-041G
Site Name: LINE 3A POND GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The pond is assumed to be an excavated, unlined pit. The pond area is relatively flat and slopes gently. While some sources conflict on this fact, it is generally believed that this site was excavated and backfilled circa 1959.

Approximately 15,000 gallons of spent sulfuric and hydrochloric acid were disposed in the pond and neutralized with sodium hydroxide.

The PA/SI was completed in 1991, and the RI was completed in May 1996; samples found no explosives or metals above action levels in the soil.

Groundwater, surface water, and sediment are addressed in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-042G
Site Name: ABANDONED COAL STORAGE YARD GRNDWTR

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

During the operation of the Steam Generating Plant, coal was the primary fuel used. The Coal Pile is bounded on the north and east by railroad tracks and on the southeast by the head of Brush Creek. It has been discovered runoff may have spread to a greater area.

The SI sampling was completed in 1991 and no significant contamination was found.

Site IAAP-042, Abandoned Coal Storage Yard was eliminated from RI consideration because the installation completed a state of Iowa Department of Natural Resources Removal Activity. This excavation was summarized in a Finding of No Significant Impact dated Oct. 26, 1992. The RCRA Branch of Region VII USEPA has agreed to this removal action. The removal was completed in late-1993, and the area was covered with clean soil and re-vegetated with native grasses.

The site remains open for groundwater evaluation in OU-6. OU-6 phase progress will be tracked, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-043G
Site Name: FLY ASH DISPOSAL AREA GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Other (Sulfate), Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

In operation from the 1940s to the 1950s, this area was used for disposal of fly ash, residual coal, clinkers, and other residue from the coal-fired power plant. The site is abandoned and covered with natural vegetation, but has no soil or clay cover.

The PA/SI was completed in 1991 and the RI was completed in May 1996. The sampling found no significant contamination.

The site remains open for groundwater evaluation in OU-6. OU-6 phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-044
Site Name: LINE 800 & PINKWATER LAGOON

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	197803	199105
SI	197803	199105
RI/FS	199012	199605
RD	200206	200611
IRA	199603	200009
RA(C)	200406	200709
LTM	200709	204509

RIP Date: N/A

RC Date: 200709

SITE DESCRIPTION

In 1943, leaching fields associated with the lagoon to include evaporation furrows were constructed. The lagoon also received metal cleaning sludge. In the 1970s, this lagoon ceased to be used.

Studies conducted in 1991 through 1998 indicated that primary waste disposed at the site included explosives-contaminated wash water and heavy metals from operations at Line 800 and other production lines. Carbon and fly ash disposal may also have occurred at the site. As a result of the RI sampling 63,236 cy of explosives-contaminated soils were excavated from this area during 1997. The excavated soil contained greater than 80,000 lbs. of explosives. This soil was taken to the IDA (IAAP-020) and sorted by contaminant level and type.

Two additional areas of explosives soil contamination were found in 1998. One area in the southwest portion of the lagoon was found to require no action. The other area, in settling basin No. 1, requires additional characterization and excavation.

The lagoon currently is used as a phytoremediation wetlands treatment cell.

The Army has determined that the facilities at this Line are excess and will pursue non-ER,A funding for building demolition and debris removal. Additional evaluation of soil beneath the slabs will be required after the demolition.

This site requires NFA and is considered RC for soils media under the IRP.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains.

Site ID: IAAP-044G

Site Name: LINE 800 & PINKWATER LAGOON- GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Explosives

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	197803	199105
SI	197803	199105
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

In 1943 leaching fields associated with the lagoon to include evaporation furrows were constructed. The lagoon also received metal cleaning sludge. In the 1970s, this lagoon ceased to be used. This IRP site consists of the groundwater contamination from past activities.

Studies conducted from 1991 through 1998 indicated that primary waste disposed at the site included explosives-contaminated wash water and heavy metals from operations at Line 800 and other production lines. Carbon and fly ash disposal also may have occurred at the site. During 1997, as a result of the RI sampling, 63,236 cy of explosives-contaminated soils were excavated from this area. In July 2001 the supplemental groundwater RI was completed.

In 1991 the PA/SI was completed and in May 1996 an initial RI was completed. In 2004-2006, the comprehensive watersheds evaluation and supplemental data collection was completed. In 2005, treatability studies were completed. OU-6 FS is currently underway.

High levels of explosives in concentrations of greater than 2,500 ppb have been found in shallow groundwater (up to 30 ft bgs). The groundwater discharges into a tributary of Brush Creek.

Phase progress will be tracked at this site, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: IAAP-046
Site Name: OFF POST CONTAMINATION

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Explosives

Media of Concern: Groundwater, Surface Water

Phases	Start	End
PA	198505	198510
SI	199209	199305
RI/FS	199906	200509
RD	200406	200609
IRA	199305	200110
RA(C)	200406	200709
RA(O)	200406	204709

RIP Date: 200709

RC Date: 204709

SITE DESCRIPTION

Historically, discharges of explosive-contaminated wastewater have resulted in surface water and groundwater contamination off-post, mainly in the Brush Creek watershed.

In 1993, off-post contamination of some private drinking water wells with explosives [RDX and 2,6 dinitrotoluene (DNT)] was confirmed. The IAAAP contracted to connect residents in the contaminated area to the public water supply. This RA was designed to eliminate the pathway of future exposures to contaminated drinking water and was completed in fall 1994. IAAAP is investigating groundwater contamination both on- and off-post. In 1998 the off-post efforts were accelerated due to increased stakeholder interest.

High levels of RDX (up to 150 micrograms per liter) were detected in the Brush Creek watershed approximately 2 miles off-post.

In 2001, IAAAP provided connection of Rathbun Regional Water to 34 homeowners who had declined this in 1993. The total number of homes now connected to the Rathbun Regional Water supply is 188.

In 2003, during annual groundwater sampling, groundwater was analyzed for radionuclides by FUSRAP. Only naturally occurring isotopes were detected.

In 2004, the FS and proposed plan (PP) were completed. The preferred alternative is enhanced bioremediation.

In 2005, the ROD for off-post groundwater was signed. It indicated that the remedy for the high concentration zone be below 50 ppb by 2012. While the annual report for 2014 is currently in the process of being finalized, the 2013 report indicated one area above 50 ppb. That area received the method for enhanced degradation and the results will be provided in the finalized report.

CLEANUP/EXIT STRATEGY

The implementation of the OU-3 ROD for off-post groundwater will continue. Enhanced degradation will continue until RDX in groundwater is below 50 ppb throughout the plume. The remedy will continue with monitored natural attenuation (MNA), and institutional and engineering controls until acceptable human health risks are achieved. The ROD requires levels less than 2 ppb by 2047.

Site ID: IAAP-047
Site Name: Central Test Area

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	200406	200710
RD	200406	200710
RA(C)	200406	200710
LTM	200710	204509

RIP Date: N/A

RC Date: 200710

SITE DESCRIPTION

Very little historical documentation is available on this particular site, but layout drawings are dated back as far as 1943. It is not known exactly when this area was in operation.

During the historical site assessment, it was determined there was a potential MEC concern at this site. A geophysical density survey for MEC was performed at the central test area in the fall of 2004. The MEC density survey was performed using an electromagnetic metal detector to a depth of 4 ft bgs.

MEC construction support was provided for the two identified soil removal areas. Soil was excavated and transported to the IDA for treatment.

This site requires NFA and is considered RC for soils media under the IRP. Costs are captured in IAAP-020.

CLEANUP/EXIT STRATEGY

No further RA or LUCs are required per the ROD; however, LTM, which includes internal installation-specific restrictions (best management practices) and five-year reviews will be required for a rolling 30 years because contamination above UU/UE remains. This applies only to soils being addressed by the IRP.

Site ID: IAAP-047G
Site Name: Central Test Area GROUNDWATER

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198901	199105
SI	199012	199108
RI/FS	200406	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

Very little historical documentation is available on this particular site, but layout drawings are dated back as far as 1943. It is not known exactly when this area was in operation.

Groundwater is addressed in OU-6. Phase progress will be tracked here, but funding requirements will be tracked under site IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
IAAP-001	LINE 1 AMMO LAP(MISSILE/FORMER AEC)	200309	Soil contamination at Line 1 will be addressed by FUSRAP. IRP will address the groundwater under site CC-001G.
IAAP-008	LINE 7 AMMO LAP(FUZE/BLANK)	199605	Contamination not found above action levels. Confirmation sampling conducted after the building deconstruction in January 2006.
IAAP-011	LINE 800 AMMO RENOV	200009	Merged with IAAP-044
IAAP-014	BOXCAR UNLOADING AREA	199606	Samples taken during the SI found no significant contamination. Per the 1996 RI, no corrective action was recommended. This site is NFA for sols media under IRP.
IAAP-019	CONTAMINATED CLOTHING LAUNDRY	199706	Transferred to CC Program in 1997. In 2009, the site became DERP eligible and was transferred back to IRP as part of a policy change and will be addressed under site CC-01.
IAAP-021	DEMOLITION AREA/DEACTIVATION FURNACE	200009	Transferred to CC Program.
IAAP-022	UNIDENTIFIED SUBSTANCE(OIL) WASTE SITE	199108	The SI sampling was completed in 1991 and no significant contamination was found. This site requires NFA under the IRP.
IAAP-024	CONTAMINATED WASTE PROCESSOR	199605	Transferred to CC Program.
IAAP-026	SEWAGE TREATMENT PLANT/DRYING BEDS	200010	Transferred to CC Program.
IAAP-027	FLY ASH LANDFILL (NEW BLDG 400-139)	199605	Transferred to CC Program.
IAAP-029	LINE 3A SEWAGE TREATMENT PLANT/DRY BED	200010	Transferred to CC Program.
IAAP-030	FIRING SITE AREA	200309	Transferred to FUSRAP.
IAAP-031	YARD B AMMO BOX CHIPPER DISPOSAL PIT	200010	Investigations conducted during 1997 have not substantiated the former existence of this site. If this site is ever located it will be investigated.
IAAP-042	ABANDONED COAL STORAGE YARD	199310	The SI sampling was completed in 1991 and no significant contamination was found. This site is NFA for soils media under IRP per the PA/SI and RI.
IAAP-043	FLY ASH DISPOSAL AREA	200010	The PA/SI was completed in 1991; the RI was completed in May 1996; sampling found no significant contamination. This site is NFA for the soils media under IRP.
IAAP-045	FORMER FUEL STATION UST'S	200208	Certificate of No Further Action dated Aug. 9, 2004
PBC at Iowa	PBC at Iowa	201409	Tracked under individual sites.

IRP Schedule

Date of IRP Inception: 197803

Past Phase Completion Milestones

1986

PA (IAAP-046 - OFF POST CONTAMINATION)

1989

PA (IAAP-022 - UNIDENTIFIED SUBSTANCE(OIL) WASTE SITE)

1991

SI (IAAP-001 - LINE 1 AMMO LAP(MISSILE/FORMER AEC), IAAP-002 - LINE 2 AMMO LAP(ARTILLERY/SHAPE), IAAP-002G - LINE 2 AMMO LAP - GROUNDWATER, IAAP-003 - LINE 3 AMMO LAP (ARTILLERY), IAAP-003G - LINE 3 AMMO LAP - GROUNDWATER, IAAP-004 - LINE 3A AMMO LAP (ARTILLERY), IAAP-004G - LINE 3A AMMO LAP - GROUNDWATER, IAAP-005 - LINE 4A AND 4B AMMO ASSEMBLY, IAAP-005G - LINE 4A/4B AMMO ASSEMBLY GROUNDATER, IAAP-006 - LINE 5A AND 5B AMMO ASSEMBLY, IAAP-006G - LINE 5A/5B AMMO ASSMBLY GROUNDWATER, IAAP-007 - LINE 6 AMMO PRODUCTION(DETONATOR), IAAP-007G - LINE 6 AMMO PRODUCTION GROUNDWATER, IAAP-008 - LINE 7 AMMO LAP(FUZE/BLANK), IAAP-008G - LINE 7 AMMO LAP GROUNDWATER, IAAP-009 - LINE 8 AMMO LAP(FUZE/ROCKET), IAAP-009G - LINE 8 AMMO LAP GROUNDWATER, IAAP-010 - LINE 9 AMMO LAP (MINE), IAAP-010G - LINE 9 AMMO LAP - GROUNDWATER, IAAP-011 - LINE 800 AMMO RENOV, IAAP-012 - EXPLOSIVE DISPOSAL AREA (EAST BURN PADS), IAAP-012G - EDA/EAST BURN PADS - GROUNDWATER, IAAP-013 - INCENDIARY DISPOSAL AREA (EAST YARD D), IAAP-013G - INCENDIARY DISPOSAL AREA GROUNDWATR, IAAP-014 - BOXCAR UNLOADING AREA, IAAP-014G - BOX CAR UNLOADING AREA GROUNDWATER, IAAP-015 - OLD FLY ASH WASTE PILE, IAAP-015G - OLD FLY ASH WASTE PILE GROUNDWATER, IAAP-016 - LINE 1 FORMER WASTEWATER IMPOUNDMENT, IAAP-016G - LINE 1 FORMER IMPOUNDMENT GRNDWATER, IAAP-017 - PESTICIDE PIT, IAAP-017G - PESTICIDE PIT GROUNDWATER, IAAP-018 - POSSIBLE DEMOLITION SITE(SOUTH YARD G), IAAP-018G - POSSIBLE DEMOLITION SITE GRNDWATER, IAAP-019 - CONTAMINATED CLOTHING LAUNDRY, IAAP-020 - INERT DISPOSAL AREA, IAAP-020G - INERT DISPOSAL AREA - GROUNDWATER, IAAP-021 - DEMOLITION AREA/DEACTIVATION FURNACE, IAAP-022 - UNIDENTIFIED SUBSTANCE(OIL) WASTE SITE, IAAP-022G - UNIDENTIFIED SUBSTANCE (OIL) GNDWTR, IAAP-024 - CONTAMINATED WASTE PROCESSOR, IAAP-025 - EXPLOSIVE WASTE INCINERATOR, IAAP-025G - EXPLOSIVE WASTE INCINERATOR GRNDWTR, IAAP-026 - SEWAGE TREATMENT PLANT/DRYING BEDS, IAAP-027 - FLY ASH LANDFILL (NEW BLDG 400-139), IAAP-028 - CONSTRUCTION DEBRIS DISPOSAL AREA , IAAP-028G - CONSTRUCTION DEBRIS DISPOSAL GRDWTR, IAAP-029 - LINE 3A SEWAGE TREATMENT PLANT/DRY BED, IAAP-030 - FIRING SITE AREA, IAAP-030G - FIRING SITE AREA GROUNDWATER, IAAP-031 - YARD B AMMO BOX CHIPPER DISPOSAL PIT, IAAP-031G - AMMO BOX CHIPPER DISPOSAL GRNDWATER, IAAP-032 - BURN CAGES, BCLF; WEST BURN PADS, WBPLF, IAAP-032G - WEST BURN PAD AREA - GROUNDWATER, IAAP-036 - NORTH BURN PADS (2) (NEAR IAAP-024), IAAP-036G - NORTH BURN PADS GROUNDWATER, IAAP-037 - NORTH BURN PADS LANDFILL, IAAP-037G - NORTH BURN PADS LANDFILL GRNDWATER, IAAP-038 - BUILDING 600-86 SEPTIC SYSTEM, IAAP-038G - BUILDING 600-86 SEPTIC SYS GNDWTR, IAAP-039 - FIRE TRAINING PIT, IAAP-039G - FIRE TRAINING PIT - GROUNDWATER, IAAP-040 - ROUNDHOUSE TRANSFORMER STORAGE AREA, IAAP-040G - ROUNDHOUSE TRANSFORMER AREA GRNDWTR, IAAP-041 - LINE 3A POND, IAAP-041G - LINE 3A POND GROUNDWATER, IAAP-042 - ABANDONED COAL STORAGE YARD, IAAP-042G - ABANDONED COAL STORAGE YARD GRNDWTR, IAAP-043 - FLY ASH DISPOSAL AREA, IAAP-043G - FLY ASH DISPOSAL AREA GROUNDWATER, IAAP-044 - LINE 800 & PINKWATER LAGOON, IAAP-044G - LINE 800 & PINKWATER LAGOON- GROUNDWATER, IAAP-047 - Central Test Area, IAAP-047G - Central Test Area GROUNDWATER)

PA (IAAP-001 - LINE 1 AMMO LAP(MISSILE/FORMER AEC), IAAP-002 - LINE 2 AMMO LAP(ARTILLERY/SHAPE), IAAP-002G - LINE 2 AMMO LAP - GROUNDWATER, IAAP-003 - LINE 3 AMMO LAP (ARTILLERY), IAAP-003G - LINE 3 AMMO LAP - GROUNDWATER, IAAP-004 - LINE 3A AMMO LAP (ARTILLERY), IAAP-004G - LINE 3A AMMO LAP - GROUNDWATER, IAAP-005 - LINE 4A AND 4B AMMO ASSEMBLY, IAAP-005G - LINE 4A/4B AMMO ASSEMBLY GROUNDATER, IAAP-006 - LINE 5A AND 5B AMMO ASSEMBLY, IAAP-006G - LINE 5A/5B AMMO ASSMBLY GROUNDWATER, IAAP-007 - LINE 6 AMMO PRODUCTION(DETONATOR), IAAP-007G - LINE 6 AMMO PRODUCTION GROUNDWATER, IAAP-008 - LINE 7 AMMO LAP(FUZE/BLANK), IAAP-008G - LINE 7 AMMO LAP GROUNDWATER, IAAP-009 - LINE 8 AMMO LAP(FUZE/ROCKET), IAAP-009G - LINE 8 AMMO LAP GROUNDWATER, IAAP-010 - LINE 9 AMMO

	LAP (MINE), IAAP-010G - LINE 9 AMMO LAP - GROUNDWATER, IAAP-011 - LINE 800 AMMO RENOV, IAAP-012 - EXPLOSIVE DISPOSAL AREA (EAST BURN PADS), IAAP-012G - EDA/EAST BURN PADS - GROUNDWATER, IAAP-013 - INCENDIARY DISPOSAL AREA (EAST YARD D), IAAP-013G - INCENDIARY DISPOSAL AREA GROUNDWATR, IAAP-014 - BOXCAR UNLOADING AREA, IAAP-014G - BOX CAR UNLOADING AREA GROUNDWATER, IAAP-015 - OLD FLY ASH WASTE PILE, IAAP-015G - OLD FLY ASH WASTE PILE GROUNDWATER, IAAP-016 - LINE 1 FORMER WASTEWATER IMPOUNDMENT, IAAP-016G - LINE 1 FORMER IMPOUNDMENT GRNDWATER, IAAP-017 - PESTICIDE PIT, IAAP-017G - PESTICIDE PIT GROUNDWATER, IAAP-018 - POSSIBLE DEMOLITION SITE(SOUTH YARD G), IAAP-018G - POSSIBLE DEMOLITION SITE GRNDWATER, IAAP-019 - CONTAMINATED CLOTHING LAUNDRY, IAAP-020 - INERT DISPOSAL AREA, IAAP-020G - INERT DISPOSAL AREA - GROUNDWATER, IAAP-021 - DEMOLITION AREA/DEACTIVATION FURNACE, IAAP-022G - UNIDENTIFIED SUBSTANCE (OIL) GNDWTR, IAAP-024 - CONTAMINATED WASTE PROCESSOR, IAAP-025 - EXPLOSIVE WASTE INCINERATOR, IAAP-025G - EXPLOSIVE WASTE INCINERATOR GRNDWTR, IAAP-026 - SEWAGE TREATMENT PLANT/DRYING BEDS, IAAP-027 - FLY ASH LANDFILL (NEW BLDG 400-139), IAAP-028 - CONSTRUCTION DEBRIS DISPOSAL AREA , IAAP-028G - CONSTRUCTION DEBRIS DISPOSAL GRDWTR, IAAP-029 - LINE 3A SEWAGE TREATMENT PLANT/DRY BED, IAAP-030 - FIRING SITE AREA, IAAP-030G - FIRING SITE AREA GROUNDWATER, IAAP-031 - YARD B AMMO BOX CHIPPER DISPOSAL PIT, IAAP-031G - AMMO BOX CHIPPER DISPOSAL GRNDWATER, IAAP-032 - BURN CAGES, BCLF; WEST BURN PADS, WBPLF, IAAP-032G - WEST BURN PAD AREA - GROUNDWATER, IAAP-036 - NORTH BURN PADS (2) (NEAR IAAP-024), IAAP-036G - NORTH BURN PADS GROUNDWATER, IAAP-037 - NORTH BURN PADS LANDFILL, IAAP-037G - NORTH BURN PADS LANDFILL GRNDWATER, IAAP-038 - BUILDING 600-86 SEPTIC SYSTEM, IAAP-038G - BUILDING 600-86 SEPTIC SYS GNDWTR, IAAP-039 - FIRE TRAINING PIT, IAAP-039G - FIRE TRAINING PIT - GROUNDWATER, IAAP-040 - ROUNDHOUSE TRANSFORMER STORAGE AREA, IAAP-040G - ROUNDHOUSE TRANSFORMER AREA GRNDWTR, IAAP-041 - LINE 3A POND, IAAP-041G - LINE 3A POND GROUNDWATER, IAAP-042 - ABANDONED COAL STORAGE YARD, IAAP-042G - ABANDONED COAL STORAGE YARD GRNDWTR, IAAP-043 - FLY ASH DISPOSAL AREA, IAAP-043G - FLY ASH DISPOSAL AREA GROUNDWATER, IAAP-044 - LINE 800 & PINKWATER LAGOON, IAAP-044G - LINE 800 & PINKWATER LAGOON- GROUNDWATER, IAAP-047 - Central Test Area, IAAP-047G - Central Test Area GROUNDWATER)
1993	
RD	(IAAP-042 - ABANDONED COAL STORAGE YARD)
RI/FS	(IAAP-042 - ABANDONED COAL STORAGE YARD)
SI	(IAAP-046 - OFF POST CONTAMINATION)
1994	
RA(C)	(IAAP-042 - ABANDONED COAL STORAGE YARD)
1996	
RI/FS	(IAAP-002 - LINE 2 AMMO LAP(ARTILLERY/SHAPE), IAAP-003 - LINE 3 AMMO LAP (ARTILLERY), IAAP-004 - LINE 3A AMMO LAP (ARTILLERY), IAAP-008 - LINE 7 AMMO LAP(FUZE/BLANK), IAAP-010 - LINE 9 AMMO LAP (MINE), IAAP-014 - BOXCAR UNLOADING AREA, IAAP-024 - CONTAMINATED WASTE PROCESSOR, IAAP-027 - FLY ASH LANDFILL (NEW BLDG 400-139), IAAP-037 - NORTH BURN PADS LANDFILL, IAAP-038 - BUILDING 600-86 SEPTIC SYSTEM, IAAP-044 - LINE 800 & PINKWATER LAGOON)
IRA	(IAAP-017 - PESTICIDE PIT)
1997	
RI/FS	(IAAP-012 - EXPLOSIVE DISPOSAL AREA (EAST BURN PADS), IAAP-016 - LINE 1 FORMER WASTEWATER IMPOUNDMENT, IAAP-019 - CONTAMINATED CLOTHING LAUNDRY)
RA(C)	(IAAP-016 - LINE 1 FORMER WASTEWATER IMPOUNDMENT)
1998	
RD	(IAAP-006 - LINE 5A AND 5B AMMO ASSEMBLY, IAAP-012 - EXPLOSIVE DISPOSAL AREA (EAST BURN PADS))
RI/FS	(IAAP-006 - LINE 5A AND 5B AMMO ASSEMBLY, IAAP-032 - BURN CAGES, BCLF; WEST BURN PADS, WBPLF, IAAP-040 - ROUNDHOUSE TRANSFORMER STORAGE AREA)

IRP Schedule

1999	
RA(C)	(IAAP-012 - EXPLOSIVE DISPOSAL AREA (EAST BURN PADS), IAAP-037 - NORTH BURN PADS LANDFILL)
RD	(IAAP-032 - BURN CAGES, BCLF; WEST BURN PADS, WBPLF, IAAP-037 - NORTH BURN PADS LANDFILL)
2000	
RI/FS	(IAAP-007 - LINE 6 AMMO PRODUCTION(DETONATOR), IAAP-009 - LINE 8 AMMO LAP(FUZE/ROCKET), IAAP-011 - LINE 800 AMMO RENOV, IAAP-021 - DEMOLITION AREA/DEACTIVATION FURNACE)
RA(C)	(IAAP-006 - LINE 5A AND 5B AMMO ASSEMBLY)
PA	(IAAP-045 - FORMER FUEL STATION UST'S)
IRA	(IAAP-011 - LINE 800 AMMO RENOV, IAAP-021 - DEMOLITION AREA/DEACTIVATION FURNACE, IAAP-040 - ROUNDHOUSE TRANSFORMER STORAGE AREA, IAAP-044 - LINE 800 & PINKWATER LAGOON)
2001	
RI/FS	(IAAP-005 - LINE 4A AND 4B AMMO ASSEMBLY, IAAP-026 - SEWAGE TREATMENT PLANT/DRYING BEDS, IAAP-029 - LINE 3A SEWAGE TREATMENT PLANT/DRY BED, IAAP-031 - YARD B AMMO BOX CHIPPER DISPOSAL PIT, IAAP-043 - FLY ASH DISPOSAL AREA, IAAP-045 - FORMER FUEL STATION UST'S)
RD	(IAAP-045 - FORMER FUEL STATION UST'S)
2002	
IRA	(IAAP-046 - OFF POST CONTAMINATION)
RA(C)	(IAAP-045 - FORMER FUEL STATION UST'S)
2003	
RI/FS	(IAAP-001 - LINE 1 AMMO LAP(MISSILE/FORMER AEC), IAAP-030 - FIRING SITE AREA, IAAP-036 - NORTH BURN PADS (2) (NEAR IAAP-024))
PA	(PBC at Iowa - PBC at Iowa)
RA(C)	(IAAP-032 - BURN CAGES, BCLF; WEST BURN PADS, WBPLF)
RD	(IAAP-005 - LINE 4A AND 4B AMMO ASSEMBLY, IAAP-009 - LINE 8 AMMO LAP(FUZE/ROCKET), IAAP-010 - LINE 9 AMMO LAP (MINE), IAAP-040 - ROUNDHOUSE TRANSFORMER STORAGE AREA)
2004	
RI/FS	(IAAP-039 - FIRE TRAINING PIT)
IRA	(IAAP-039 - FIRE TRAINING PIT)
2005	
RI/FS	(IAAP-046 - OFF POST CONTAMINATION)
RA(C)	(IAAP-005 - LINE 4A AND 4B AMMO ASSEMBLY, IAAP-009 - LINE 8 AMMO LAP(FUZE/ROCKET), IAAP-010 - LINE 9 AMMO LAP (MINE), IAAP-040 - ROUNDHOUSE TRANSFORMER STORAGE AREA)
2006	
RD	(IAAP-046 - OFF POST CONTAMINATION)
2007	
RD	(IAAP-002 - LINE 2 AMMO LAP(ARTILLERY/SHAPE), IAAP-003 - LINE 3 AMMO LAP (ARTILLERY), IAAP-004 - LINE 3A AMMO LAP (ARTILLERY), IAAP-007 - LINE 6 AMMO PRODUCTION(DETONATOR), IAAP-044 - LINE 800 & PINKWATER LAGOON)
RA(C)	(IAAP-002 - LINE 2 AMMO LAP(ARTILLERY/SHAPE), IAAP-003 - LINE 3 AMMO LAP (ARTILLERY), IAAP-004 - LINE 3A AMMO LAP (ARTILLERY), IAAP-007 - LINE 6 AMMO PRODUCTION(DETONATOR), IAAP-044 - LINE 800 & PINKWATER LAGOON, IAAP-046 - OFF POST CONTAMINATION)
2008	
RD	(IAAP-013 - INCENDIARY DISPOSAL AREA (EAST YARD D), IAAP-018 - POSSIBLE DEMOLITION SITE(SOUTH YARD G), IAAP-047 - Central Test Area)
RA(C)	(IAAP-013 - INCENDIARY DISPOSAL AREA (EAST YARD D), IAAP-018 - POSSIBLE DEMOLITION SITE(SOUTH YARD G), IAAP-047 - Central Test Area)

RI/FS	(IAAP-013 - INCENDIARY DISPOSAL AREA (EAST YARD D), IAAP-018 - POSSIBLE DEMOLITION SITE(SOUTH YARD G), IAAP-047 - Central Test Area)

2014

RI/FS	(PBC at Iowa - PBC at Iowa)
RA(O)	(PBC at Iowa - PBC at Iowa)
RA(C)	(PBC at Iowa - PBC at Iowa)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
IAAP-021	DEMOLITION AREA/DEACTIVATION FURNACE	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-019	CONTAMINATED CLOTHING LAUNDRY	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-032	BURN CAGES, BCLF; WEST BURN PADS, WBPLF	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-032G	WEST BURN PAD AREA - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-003G	LINE 3 AMMO LAP - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-029	LINE 3A SEWAGE TREATMENT PLANT/DRY BED	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-016	LINE 1 FORMER WASTEWATER IMPOUNDMENT	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-031	YARD B AMMO BOX CHIPPER DISPOSAL PIT	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-045	FORMER FUEL STATION UST'S	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-004	LINE 3A AMMO LAP (ARTILLERY)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-025	EXPLOSIVE WASTE INCINERATOR	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-044	LINE 800 & PINKWATER LAGOON	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-046	OFF POST CONTAMINATION	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-009	LINE 8 AMMO LAP(FUZE/ROCKET)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-036	NORTH BURN PADS (2) (NEAR IAAP-024)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-010G	LINE 9 AMMO LAP - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-039	FIRE TRAINING PIT	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-040	ROUNDHOUSE TRANSFORMER STORAGE AREA	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-013	INCENDIARY DISPOSAL AREA (EAST YARD D)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-003	LINE 3 AMMO LAP (ARTILLERY)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-004G	LINE 3A AMMO LAP - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-005	LINE 4A AND 4B AMMO ASSEMBLY	FINAL INSTALLATION ROD - OU #4	20180930

IAAP-022	UNIDENTIFIED SUBSTANCE(OIL) WASTE SITE	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-017	PESTICIDE PIT	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-001	LINE 1 AMMO LAP(MISSILE/FORMER AEC)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-012G	EDA/EAST BURN PADS - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-008	LINE 7 AMMO LAP(FUZE/BLANK)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-014	BOXCAR UNLOADING AREA	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-030	FIRING SITE AREA	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-020G	INERT DISPOSAL AREA - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-002G	LINE 2 AMMO LAP - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-042	ABANDONED COAL STORAGE YARD	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-032G	WEST BURN PAD AREA - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-004G	LINE 3A AMMO LAP - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-044	LINE 800 & PINKWATER LAGOON	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-046	OFF POST CONTAMINATION	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-003G	LINE 3 AMMO LAP - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-010G	LINE 9 AMMO LAP - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-044G	LINE 800 & PINKWATER LAGOON- GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-039G	FIRE TRAINING PIT - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-002G	LINE 2 AMMO LAP - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-043	FLY ASH DISPOSAL AREA	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-012G	EDA/EAST BURN PADS - GROUNDWATER	FINAL GROUNDWATER ROD - OU #3	20180930
IAAP-038	BUILDING 600-86 SEPTIC SYSTEM	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-024	CONTAMINATED WASTE PROCESSOR	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-012	EXPLOSIVE DISPOSAL AREA (EAST BURN PADS)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-011	LINE 800 AMMO RENOV	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-026	SEWAGE TREATMENT PLANT/DRYING BEDS	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-044G	LINE 800 & PINKWATER LAGOON- GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-006	LINE 5A AND 5B AMMO ASSEMBLY	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-020	INERT DISPOSAL AREA	FINAL INSTALLATION ROD - OU #4	20180930

IAAP-037	NORTH BURN PADS LANDFILL	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-010	LINE 9 AMMO LAP (MINE)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-015	OLD FLY ASH WASTE PILE	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-041	LINE 3A POND	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-039G	FIRE TRAINING PIT - GROUNDWATER	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-018	POSSIBLE DEMOLITION SITE(SOUTH YARD G)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-028	CONSTRUCTION DEBRIS DISPOSAL AREA	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-027	FLY ASH LANDFILL (NEW BLDG 400-139)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-007	LINE 6 AMMO PRODUCTION(DETONATOR)	FINAL INSTALLATION ROD - OU #4	20180930
IAAP-043	FLY ASH DISPOSAL AREA	FINAL INSTALLATION ROD - OU #4	20180930

Final RA(C) Completion Date: 202311

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of IRP at Installation (including LTM phase): 205512

IOWA ARMY AMMUNITION PLANT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
IAAP-002	LINE 2 AMMO LAP(ARTILLERY/SHAPE)	LTM						
IAAP-002G	LINE 2 AMMO LAP - GROUNDWATER	RI/FS						
IAAP-003	LINE 3 AMMO LAP (ARTILLERY)	LTM						
IAAP-003G	LINE 3 AMMO LAP - GROUNDWATER	RI/FS						
IAAP-004	LINE 3A AMMO LAP (ARTILLERY)	LTM						
IAAP-004G	LINE 3A AMMO LAP - GROUNDWATER	RI/FS						
IAAP-005	LINE 4A AND 4B AMMO ASSEMBLY	LTM						
IAAP-005G	LINE 4A/4B AMMO ASSEMBLY GROUNDATER	RI/FS						
IAAP-006	LINE 5A AND 5B AMMO ASSEMBLY	LTM						
IAAP-006G	LINE 5A/5B AMMO ASSMBLY GROUNDWATER	RI/FS						
IAAP-007	LINE 6 AMMO PRODUCTION(DETONATOR)	LTM						
IAAP-007G	LINE 6 AMMO PRODUCTION GROUNDWATER	RI/FS						
IAAP-008G	LINE 7 AMMO LAP GROUNDWATER	RI/FS						
IAAP-009	LINE 8 AMMO LAP(FUZE/ROCKET)	LTM						
IAAP-009G	LINE 8 AMMO LAP GROUNDWATER	RI/FS						
IAAP-010	LINE 9 AMMO LAP (MINE)	LTM						
IAAP-010G	LINE 9 AMMO LAP - GROUNDWATER	RI/FS						
IAAP-012	EXPLOSIVE DISPOSAL AREA (EAST BURN PADS)	LTM						
IAAP-012G	EDA/EAST BURN PADS - GROUNDWATER	RI/FS						
IAAP-013	INCENDIARY DISPOSAL AREA (EAST YARD D)	LTM						

IOWA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
IAAP-013G	INCENDIARY DISPOSAL AREA GROUNDWATR	RI/FS						
IAAP-014G	BOX CAR UNLOADING AREA GROUNDWATER	RI/FS						
IAAP-015	OLD FLY ASH WASTE PILE	RI/FS						
IAAP-015G	OLD FLY ASH WASTE PILE GROUNDWATER	RI/FS						
IAAP-016	LINE 1 FORMER WASTEWATER IMPOUNDMENT	LTM						
IAAP-016G	LINE 1 FORMER IMPOUNDMENT GRNDWATER	RI/FS						
IAAP-017	PESTICIDE PIT	RI/FS						
IAAP-017G	PESTICIDE PIT GROUNDWATER	RI/FS						
IAAP-018	POSSIBLE DEMOLITION SITE(SOUTH YARD G)	LTM						
IAAP-018G	POSSIBLE DEMOLITION SITE GRNDWATER	RI/FS						
IAAP-020	INERT DISPOSAL AREA	RI/FS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
IAAP-020G	INERT DISPOSAL AREA - GROUNDWATER	RI/FS						
IAAP-022G	UNIDENTIFIED SUBSTANCE (OIL) GNDWTR	RI/FS						
IAAP-025	EXPLOSIVE WASTE INCINERATOR	RI/FS						
IAAP-025G	EXPLOSIVE WASTE INCINERATOR GRNDWTR	RI/FS						
IAAP-028	CONSTRUCTION DEBRIS DISPOSAL AREA	RI/FS						
IAAP-028G	CONSTRUCTION DEBRIS DISPOSAL GRDWTR	RI/FS						
IAAP-030G	FIRING SITE AREA GROUNDWATER	RI/FS						

IOWA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
IAAP-031G	AMMO BOX CHIPPER DISPOSAL GRNDWATER	RI/FS						
IAAP-032	BURN CAGES, BCLF; WEST BURN PADS, WBPLF	LTM						
IAAP-032G	WEST BURN PAD AREA - GROUNDWATER	RI/FS						
IAAP-036	NORTH BURN PADS (2) (NEAR IAAP-024)	LTM						
IAAP-036G	NORTH BURN PADS GROUNDWATER	RI/FS						
IAAP-037	NORTH BURN PADS LANDFILL	LTM						
IAAP-037G	NORTH BURN PADS LANDFILL GRNDWATER	RI/FS						
IAAP-038	BUILDING 600-86 SEPTIC SYSTEM	LTM						
IAAP-038G	BUILDING 600-86 SEPTIC SYS GNDWTR	RI/FS						
IAAP-039	FIRE TRAINING PIT	LTM						
IAAP-039G	FIRE TRAINING PIT - GROUNDWATER	RI/FS						
IAAP-040	ROUNDHOUSE TRANSFORMER STORAGE AREA	LTM						
IAAP-040G	ROUNDHOUSE TRANSFORMER AREA GRNDWTR	RI/FS						
IAAP-041	LINE 3A POND	RI/FS						
IAAP-041G	LINE 3A POND GROUNDWATER	RI/FS						
IAAP-042G	ABANDONED COAL STORAGE YARD GRNDWTR	RI/FS						
IAAP-043G	FLY ASH DISPOSAL AREA GROUNDWATER	RI/FS						
IAAP-044	LINE 800 & PINKWATER LAGOON	LTM						
IAAP-044G	LINE 800 & PINKWATER LAGOON-GROUNDWATER	RI/FS						
IAAP-046	OFF POST CONTAMINATION	RA(O)						

IOWA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
IAAP-047	Central Test Area	LTM						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
IAAP-047G	Central Test Area GROUNDWATER	RI/FS						

IOWA ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 8/4

Installation Site Types with Future and/or Underway Phases

4 Unexploded Munitions/Ordnance

(IAAP-001-R-01, IAAP-002-R-01, IAAP-004-R-01, IAAP-006-R-01)

Most Widespread Contaminants of Concern

Explosives, Metals, Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern

Groundwater, Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of MMRP

Date of MMRP Inception 200305

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201612/201612

Date of MMRP completion including Long Term Management (LTM): 204611

MMRP Contamination Assessment

Contamination Assessment Overview

In October 2003, the Phase 3 Army Range Inventory at IAAAP was completed. The closed, transferred or transferring (CTT) report identified three sites as eligible for the MMRP: the Central Test Area, the Line 6 Ammo Production, and the West Burn Pads Area South. The Phase 3 inventory serves as the PA under CERCLA. In FY07 an SI was completed. The intrusive portion of the RI was completed in FY09.

Although the North Burn Pads are shown on the map as a potential MMRP site, there are no plans to address this site under MMRP, as all soil actions have previously been conducted under the IRP.

The IAAAP has requested that three sites be included in the MMRP: the PDS (IAAP-004-R-01), the InDA (IAAP-006-R-01), and the Maneuver Area (IAAP-006-R-02). These sites were not included in the CTT report, completed in 2003, because there was little information available on them.

In 2004 the PDS and InDA were investigated and MEC was found, as documented in the draft final soils data collection report of 2005. These sites were accepted by the MMRP and included in their SI. The RI began in April 2008 and the final RI report was completed as of August 2011. The FS and the FS Amendment was completed in 2012.

Fencing installation was completed 2012 at the PDS and InDA per the 2006 dispute resolution.

An EE/CA is being prepared for the historical small arms range within the PDS MRS. The intent of this work is to characterize the nature and extent of MC contamination associated with the site.

Cleanup Exit Strategy

As determined in the ROD, there is no further action for Line 6 Ammo Production (Outside Blast Radii), West Burn Pads, West Burn Pads South and the Maneuver Area. Plans to implement LUCs will commence in 2016 for the CTA, Line 6 Ammo Production (Inside Blast Radii), PDS, and the InDA. An RA is planned with off-site disposal for the PDS.

MMRP Previous Studies

	Title	Author	Date
2003			
	Final Closed, Transferred and Transferring Range/Site Inventory Report	Engineering - Environment Management, Inc.	OCT-2003
2007			
	Final U.S. Army Operational Range Inventory Sustainment FY06	US Army Environmental Center	FEB-2007
	Final Historical Records Review for the Military Munitions Response Program	URS Corporation	JUL-2007
	Final Site Inspection Report for the Military Munitions Response Program	URS Corporation	SEP-2007
2008			
	Draft Final Remedial Investigation Work Plan for the Military Munitions Response Program	URS Corporation	APR-2008
	Draft Final Work Plan Addendum Military Munitions Response Program Geophysical Prove-Out Plan	URS Corporation	JUN-2008
	Draft Final Geophysical Prove-Out Technical Memorandum for the Military Munitions Response Program	URS Corporation	SEP-2008
	Draft Final Geophysical Investigation Letter Work Plan Addendum for the Military Munitions Response Program	URS Corporation	SEP-2008
2009			
	Draft Final Intrusive Investigation Letter Work Plan Addendum for the Military Munitions Response Program	URS Corporation	MAY-2009
2011			
	Final Remedial Investigation Report for the Military Munitions Response Program	URS Corporation	JUN-2011
	Final Accident Prevention Plan (Includes Site Safety and Health Plan) for the Military Munitions Response Program	Shaw	NOV-2011
2012			
	Final Fence Installation Work Plan for Possible Demolition Site and Incendiary Disposal Area for the Military Munitions Response Program	Shaw	FEB-2012
	Final Engineering Evaluation/Cost Analysis Work Plan for the Historical Small Arms Range for the Military Munitions Response Program	Shaw	MAY-2012
	Final Feasibility Study Report and Amendment for the Military Munitions Response Program	URS, Amended by Shaw	NOV-2012
2013			
	Final OU5 Engineering Evaluation/Cost Analysis for the Historical Small Arms Range for the Military Munitions Response Program	CB&I Federal Services	APR-2013
	Final OU5 Action Memorandum for the Historical Small Arms Range, Military Munitions Response Program	CB&I Federal Services	NOV-2013
2014			
	Final OU5 Record of Decision	CB&I Federal Services	SEP-2014

IOWA ARMY AMMUNITION PLANT

Military Munitions Response Program

Site Descriptions

Site ID: IAAP-001-R-01
Site Name: CENTRAL TEST AREA

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 06

Contaminants of Concern: Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
PA	200305	200310
SI	200606	200710
RI/FS	200703	201409
RD	201501	201604
RA(C)	201501	201612
LTM	201612	204611

RIP Date: N/A

RC Date: 201612

SITE DESCRIPTION

In fall 2004 MKM Engineers, Inc. performed a Geophysical Density Survey for MEC at the Central Test Area. The MEC density survey was performed using an electromagnetic metal detector to a depth of 4 ft bgs. MEC construction support is recommended for the two identified concentrated areas prior to performing any intrusive activity. For all other areas at this site, avoidance procedures should be used during any sampling and clearance is required prior to any large scale soil removal.

Per the agreements made in the December 2006 dispute resolution, the US Army has agreed to complete RIs at all MMRP sites at IAAAP. The munitions response site prioritization protocol (MRSPP) score for this site was updated during the RI in FY10. The RI Report was finalized in August of 2011. The FS was completed in 2012.

The Final ROD was signed in 2014. Efforts are currently underway for the remedial design.

CLEANUP/EXIT STRATEGY

Fencing and warning signs were funded in FY15. Annual O&M costs include annual inspection and maintenance of signage and mowing along MRS perimeter. Periodic five-year reviews are funded under IAAP-020.

Site ID: IAAP-002-R-01
Site Name: LINE 6 AMMO PRODUCTION

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

Contaminants of Concern: Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
PA	200305	200310
SI	200606	200710
RI/FS	200703	201401
RD	201501	201604
RA(C)	201501	201612
LTM	201612	204609

RIP Date: N/A

RC Date: 201612

SITE DESCRIPTION

In fall 2004 MKM Engineers, Inc. performed a Geophysical Density Survey for MEC. The MEC density survey was performed using an electromagnetic metal detector to a depth of 4 ft bgs. MEC avoidance procedures should be used during any sampling and clearance is required prior to any large scale soil removal.

The US Army has determined that the facilities at this line are excess and will pursue non-ER,A funding for building demolition and debris removal of some buildings. An active Test Range began operations immediately south of Line 6 and used some previously inactive buildings.

In October 2007 the SI was completed. Per the agreements made in the December 2006 dispute resolution, the US Army has agreed to complete RIs at all MMRP sites at IAAAP. The MRSPP score for this site was updated during the RI in FY10. The RI Report was finalized in August of 2011. The FS was completed in 2012.

The remaining 87.21 acres, which are the outside of the buildings' blast radii, will be addressed in IAAP-002-R-02 with a recommendation of NFA.

The FS amendment was completed in November 2012. The Final ROD was signed in 2014. Efforts are currently underway for the remedial design.

CLEANUP/EXIT STRATEGY

Fencing and warning signs were funded in FY15. Annual O&M costs include annual inspection and maintenance of signage and mowing along MRS perimeter. Periodic five-year reviews are funded under IAAP-020.

Site ID: IAAP-004-R-01
Site Name: POSSIBLE DEMOLITION SITE

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 03

Contaminants of Concern: Explosives, Munitions and explosives of concern (MEC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	200305	200310
SI	200606	200710
RI/FS	200703	201401
RD	201501	201604
RA(C)	201501	201612
LTM	201612	204609

RIP Date: N/A

RC Date: 201612

SITE DESCRIPTION

There is no documentation to indicate that demolition activities occurred at this site or which types of ammunition items were treated. The size of the site was also unknown. In 1991 PA/SI sampling was completed and no significant contamination was found.

In October 2007 the SI was completed. Per the agreements made in the December 2006 dispute resolution, the US Army has agreed to complete RIs at all MMRP sites at IAAAP. The MRSPP score for this site was updated during the RI in FY10. The RI report was finalized in August of 2011. The FS was completed in 2012.

Fencing installation was completed in 2012 per the 2006 dispute resolution and will stand as the remedy as recommended in the FS amendment dated November 2012.

A geophysical survey and intrusive investigation have been completed as part of the RI. The RI was completed in August 2011. FS completed November 2012. The Final ROD was signed in 2014. Efforts are currently underway for the remedial design.

CLEANUP/EXIT STRATEGY

Historical small arms contamination will be addressed under an EE/CA and action memorandum. Fencing and warning signs were funded in FY15. Annual O&M costs include annual inspection and maintenance of signage and mowing along MRS perimeter. Periodic five-year reviews are funded under IAAP-020.

Site ID: IAAP-006-R-01
Site Name: INCENDIARY DISPOSAL AREA

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 03

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200305	200310
SI	200606	200710
RI/FS	200703	201401
RA(C)	201501	201612
LTM	201612	204609

RIP Date: N/A

RC Date: 201612

SITE DESCRIPTION

In the Final CTT Range/Site Inventory Report (e2M 2003) the IDA MRS was not identified as an Active US Army MMRP site. Documentation was not located that specifically identified actual munitions burned at the site. Documents reviewed for the HRR indicate that soil contamination is present.

Geophysical survey and intrusive investigation has been completed as part of the RI.

An RI was completed in August 2011.

An FS was completed in November 2012. The Final ROD was signed in 2014. Efforts are currently underway for the remedial design.

CLEANUP/EXIT STRATEGY

Fencing and warning signs were funded in FY15. Annual O&M costs include annual inspection and maintenance of signage and mowing along MRS perimeter. Periodic five-year reviews are funded under IAAP-020.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
IAAP-002-R-02	Line 6 - Outside Blast Radii	201401	
IAAP-003-R-01	WEST BURN PADS	201409	
IAAP-005-R-01	WEST BURN PADS SOUTH OF THE ROAD	201401	
IAAP-006-R-02	MANEUVER AREA	201401	

MMRP Schedule

Date of MMRP Inception 200305

Past Phase Completion Milestones

2004

PA	(IAAP-001-R-01 - CENTRAL TEST AREA, IAAP-002-R-01 - LINE 6 AMMO PRODUCTION, IAAP-002-R-02 - Line 6 - Outside Blast Radii, IAAP-003-R-01 - WEST BURN PADS, IAAP-004-R-01 - POSSIBLE DEMOLITION SITE, IAAP-005-R-01 - WEST BURN PADS SOUTH OF THE ROAD, IAAP-006-R-01 - INCENDIARY DISPOSAL AREA, IAAP-006-R-02 - MANEUVER AREA)

2008

SI	(IAAP-001-R-01 - CENTRAL TEST AREA, IAAP-002-R-01 - LINE 6 AMMO PRODUCTION, IAAP-002-R-02 - Line 6 - Outside Blast Radii, IAAP-003-R-01 - WEST BURN PADS, IAAP-004-R-01 - POSSIBLE DEMOLITION SITE, IAAP-005-R-01 - WEST BURN PADS SOUTH OF THE ROAD, IAAP-006-R-01 - INCENDIARY DISPOSAL AREA, IAAP-006-R-02 - MANEUVER AREA)

2014

RI/FS	(IAAP-001-R-01 - CENTRAL TEST AREA, IAAP-002-R-01 - LINE 6 AMMO PRODUCTION, IAAP-002-R-02 - Line 6 - Outside Blast Radii, IAAP-003-R-01 - WEST BURN PADS, IAAP-004-R-01 - POSSIBLE DEMOLITION SITE, IAAP-005-R-01 - WEST BURN PADS SOUTH OF THE ROAD, IAAP-006-R-01 - INCENDIARY DISPOSAL AREA, IAAP-006-R-02 - MANEUVER AREA)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date

Final RA(C) Completion Date: 201612

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of MMRP at Installation (including LTM phase): 204611

IOWA ARMY AMMUNITION PLANT MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
IAAP-001-R-01	CENTRAL TEST AREA	RD						
		RA(C)						
		LTM						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
IAAP-002-R-01	LINE 6 AMMO PRODUCTION	RD						
		RA(C)						
		LTM						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
IAAP-004-R-01	POSSIBLE DEMOLITION SITE	RD						
		RA(C)						
		LTM						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
IAAP-006-R-01	INCENDIARY DISPOSAL AREA	RA(C)						
		LTM						

IOWA ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 4/0

Installation Site Types with Future and/or Underway Phases

1 Contaminated Fill
(CC-IAAP-001)
1 Drainage Ditch
(CC-IAAP-002)
1 Industrial Discharge
(CC-001G)
1 Spill Site Area
(CC-01)

Most Widespread Contaminants of Concern

Asbestos, Explosives, Metals, Polychlorinated Biphenyls (PCB), Radionuclides

Media of Concern

Groundwater, Sediment, Soil, Surface Water

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of CR

Date of CR Inception: 198901

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201910/204709

Date of CR completion including Long Term Management (LTM): 204709

CR Contamination Assessment

Contamination Assessment Overview

The IAAAP is located on US Highway 34, approximately 8 miles west of Burlington, Iowa. The facility is a GO/CO military industrial installation under the jurisdiction of the US Army Joint Munitions Command, headquartered in Rock Island, Illinois. Its primary mission is to manufacture and LAP ammunition items.

The plant was established in July 1941 as the Iowa Ordnance Plant. The plant's mission was to LAP ammunition. It produced munitions for World War II until August 1945 when plant operations reverted to US Army control. Until 1951 its mission was the storage of ammunition and surveillance. From 1947 to 1975 the former US Atomic Energy Commission occupied portions of the IAAAP. Since 1951, when Mason and Hanger-Silas Mason Co., Inc. began operations, the plant has been a GO/CO. The IAAAP is currently an active installation.

The primary source of contamination at the CC sites is attributable to past operating practices during which explosive contaminated wastewater and sludge were discharged to deteriorating sumps, uncontrolled drainage ways, and land filling of waste material. Currently, process wastewaters are treated and recycled, while only a small portion of the treated wastewater, containing residual explosives and other contaminants regulated under the plant's NPDES permit, is discharged to the surface.

In August 1989, the installation was proposed for the NPL, because surface water contaminated with explosives was leaving the installation boundary. The IAAAP HRS score is 29.73. In September 1990 an FFA was signed by the USEPA, Region VII and the US Army; it became effective in December 1990.

In 2004 six sites were transferred from IRP action to CC action. They were:
- IAAP-019, Contaminated Clothing Laundry
- IAAP-021, Demolition Area/Deactivation Furnace
- IAAP-024, Contaminated Waste Processor
- AAP-026, Main Sewage Treatment Plant/Drying Beds
- IAAP-027, Fly Ash Landfill
- IAAP-029, Line 3A Sewage Treatment Plant/Drying Beds

Environmental restoration activities include the IRP and MMRP. On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment (ODUSD I&E), issued an interim policy for Defense Environmental Restoration Program (DERP) eligibility that rescinded the 1986 eligibility date for the IRP and the 2002 eligibility date for the MMRP. This made many sites previously addressed in the Army's CC program eligible for the DERP. Sites that are now eligible for the munitions response (MR) program have been migrated from Army Environmental Database-Compliance-related Cleanup (AEDB-CC) and given the naming convention of other MR sites. The newly eligible non-MR type sites are considered to be Installation Restoration (IR) sites; however, the newly eligible sites are being coded as Compliance Restoration (CR) in AEDB-R to distinguish them from the original IR sites and IR metrics.

In 2009, the CCL was transferred to back to the IRP and identified as site CC-01. The CC planned to complete the corrective measures study (CMS) at this site and the IRP was to continue subsequent actions. IRP submitted the draft SRI work plan to the USEPA in July 2011. The USEPA took exception to RCRA/CERCLA integration proposed by the Army. Therefore, the Army will continue to manage and cleanup CC-01 under RCRA.

In 2009, the Army identified two construction debris sites that require assessment and possible action. These sites are identified as CC-IAAP-001 and CC-IAAP-002. All media at these sites are addressed under OU9.

Line 1 Groundwater will be addressed under site CC-001G and was placed on contract in 2011. This site was an original IR site. Fieldwork began in the fall of 2011 and continues.

Cleanup Exit Strategy

IRP will proceed with future groundwater and surface water actions at sites CC-01 and CC-001G.

Load and haul is expected at the other CR sites as they are construction debris areas.

CR Previous Studies

	Title	Author	Date
2006			
	Draft Final Supplemental Remedial Investigation Work Plan and Regulatory Path Forward for Six Non-ER,A Eligible Sites	Tetra Tech	MAR-2006
2008			
	Data Tabulation Phase 1 Groundwater Sampling for the Contaminated Clothing Laundry (sent internally via IAAAP website)	Tetra Tech	JUL-2008
2011			
	Final Work Plan for Supplemental Remedial Investigation of Groundwater and Surface Water at Line 1	Tetra Tech	MAY-2011
2012			
	Draft Final Technical Memorandum and Work Plan Addendum: Phase 1 Sampling Results and Phase 2 Work Plan Addendum for Line 1 Groundwater and Surface Water	Tetra Tech	OCT-2012
2013			
	Final Facility Investigation Work Plan for Groundwater Contaminated Clothing Laundry	Tetra Tech	MAR-2013
	Revised Final Work Plan for Remedial Investigation of Construction Debris Sites CC-IAAP-001 and CC-IAAP-002	Pika International, Inc.	MAY-2013
2014			
	Final OU9 Focused Feasibility Study Report for Construction Debris Sites CC-IAAP-001 and CC-IAAP-002	Pika International, Inc.	AUG-2014
2015			
	Final Proposed Plan for Construction Debris Sites CC-IAAP-001 and CC-IAAP-002	Pika International, Inc.	JAN-2015

IOWA ARMY AMMUNITION PLANT

Compliance Restoration

Site Descriptions

Site ID: CC-001G
Site Name: Line 1 Groundwater

STATUS

Regulatory Driver: CERCLA

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Surface Water

Phases	Start	End
PA	198901	199105
SI	198901	199108
RI/FS	201010	201910

RIP Date: N/A

RC Date: 201910

SITE DESCRIPTION

The waste primarily comes from the historical practice of uncontrolled releases from sumps, wash downs, and operational effluent. The operational wastewater is now treated by carbon adsorption to NPDES standards. Cleanup action at this site for groundwater is being handled by the IRP.

Responsibility for soil actions were transferred to FUSRAP in 2002. LTM costs are captured under IAAP-020.

As such, all remaining cost-to-complete (CTC) are USACE supervision and review funds for FY15. OU-6 costs are captured in IAAP-020.

CLEANUP/EXIT STRATEGY

The current exit strategy includes preparation of a risk-based (10-4) trigger for active remediation. The Army will establish a CERCLA point of compliance for all identified operational areas. Preparation of the revised draft RI/FS is underway and will reflect this strategy.

Site ID: CC-01
Site Name: Contaminated Clothing Laundry

STATUS

Regulatory Driver: RCRA

Contaminants of Concern: Explosives

Media of Concern: Groundwater

Phases	Start	End
RFA	199006	199106
CS	199006	199106
RFI/CMS	199505	201610
DES	201402	201709
CMI(C)	201401	201709
CMI(O)	201402	204709

RIP Date: 201709

RC Date: 204709

SITE DESCRIPTION

This site only addresses the groundwater at the CCL. The laundry has been in operation from the 1940s through the present. It is currently used to launder coveralls, underwear, and towels used by production and maintenance personnel. The open sump was constructed in the 1940s of reinforced concrete, which was upgraded with a covered sump in 2007.

In 1991, the PA/SI was conducted by the USATHAMA; the analyses did not discover explosives-contaminated soils. The revised Draft Final RI, IAAAP, 11 Volumes was completed in 1996 reflecting SI results. In 1997 the explosive RDX was found in the surface soils surrounding the sump, indicating a potential release of water from this sump. (Report of Action IAAAP Laundry Effluent Pretreatment System Sampling and Analysis, 1997). In 2001 the site was determined to be ineligible for IRP action because it is an active site. In accordance with the 2004 FFA dispute resolution with the USEPA, the site was transferred to the CC Program for further investigation and action under RCRA. In 2006, soil sampling showed no contamination above SRI screening levels. In 2007, as part of the sump upgrade, soils were sampled again and actionable levels of explosives were discovered. Contaminated soil was removed and disposed of at the IDA under CC. This is considered a completed IRA. In 2008 sampling results indicated that the groundwater below the sump is contaminated with RDX. The highest result was 20.5 ppb RDX. In 2009, the site became DERP eligible and was transferred back to IRP as part of a policy change. In 2012, the Army proposed that the site be managed as part of OU-6, on-site groundwater, but the USEPA declined that proposal. Groundwater will proceed to be addressed under RCRA.

The draft final RCRA Facility Investigation (RFI) for the CCL was submitted in April 2014. It recommended NFA. Even so, LUCs, five-year reviews and groundwater monitoring are planned for/captured in IAAP-020.

CLEANUP/EXIT STRATEGY

The IRP will proceed with all future actions for groundwater cleanup under RCRA. Future activities at this site concern groundwater actions which will include RFI, CMS, statement of basis (SOB) and DD.

Site ID: CC-IAAP-001
Site Name: Construction Debris Site #1

STATUS

Regulatory Driver: CERCLA

Contaminants of Concern: Asbestos, Explosives, Metals, Polychlorinated Biphenyls (PCB), Radionuclides

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199001	199112
SI	199001	199112
RI/FS	201205	201712

RIP Date: N/A

RC Date: 201712

SITE DESCRIPTION

This site addresses all media: soil, groundwater, surface water, and sediment. It was discovered during work performed on the water main. The site contains construction debris that includes asbestos, lead, and possible other contaminants that appear to have been used as fill.

The RI and FS were finalized in 2014, and the PP finalized in 2015.

CLEANUP/EXIT STRATEGY

The expected remedy is to characterize the site with dig and hauls.

Site ID: CC-IAAP-002
Site Name: Construction Debris Site #2

STATUS

Regulatory Driver: CERCLA

Contaminants of Concern: Asbestos, Explosives, Metals, Polychlorinated Biphenyls (PCB), Radionuclides

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199001	199112
SI	199001	199112
RI/FS	201205	201712
RD	201509	201812
RA(C)	201901	201909

RIP Date: N/A

RC Date: 201909

SITE DESCRIPTION

This site addresses all media: soil, groundwater, surface water, and sediment. It was discovered by recreational users in March 2009. The site consists of construction debris containing asbestos and possible other contaminants.

The RI and FS were finalized in 2014, and the PP finalized in 2015.

CLEANUP/EXIT STRATEGY

The expected remedy is to characterize the site with dig and hauls.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation

There are no NFA sites

CR Schedule

Date of CR Inception: 198901

Past Phase Completion Milestones

1991

RFA	(CC-01 - Contaminated Clothing Laundry)
SI	(CC-001G - Line 1 Groundwater)
PA	(CC-001G - Line 1 Groundwater)
CS	(CC-01 - Contaminated Clothing Laundry)

1992

PA	(CC-IAAP-001 - Construction Debris Site #1, CC-IAAP-002 - Construction Debris Site #2)
SI	(CC-IAAP-001 - Construction Debris Site #1, CC-IAAP-002 - Construction Debris Site #2)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date

Final RA(C) Completion Date: 201909

Schedule for Next Five-Year Review: 2016

Estimated Completion Date of CR at Installation (including LTM phase): 204709

IOWA ARMY AMMUNITION PLANT CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY16	FY17	FY18	FY19	FY20	FY21+
CC-001G	Line 1 Groundwater	RI/FS						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
CC-01	Contaminated Clothing Laundry	RFI/CMS						
		DES						
		CMI(C)						
		CMI(O)						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
CC-IAAP-001	Construction Debris Site #1	RI/FS						
SITE ID	**SITE NAME**	**PHASE**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**	**FY21+**
CC-IAAP-002	Construction Debris Site #2	RI/FS						
		RD						
		RA(C)						

Community Involvement

Technical Review Committee (TRC): 199204

Community Involvement Plan (Date Published): 201107

Restoration Advisory Board (RAB): RAB established 199708

RAB Adjournment Date: N/A
RAB Adjournment Reason: None

Additional Community Involvement Information

In August 1997 a RAB was established. Since its inception the RAB has been very active, meeting quarterly to receive training and provide input to the environmental restoration process. The RAB members are from the surrounding communities. Government members are from the installation, the USEPA, and the state of Iowa. The RAB continues to review documents, provide input to the community relations plan, and help establish project priorities.

A separate program and citizen advisory board has been formed by the US Department of Energy to address health-related issues of former US Atomic Energy Commission workers.

The Burlington Public Library has computers available to the public for those interested in viewing the electronic version of the Administrative Record.

Burlington Public Library
210 Court Street
Burlington, IA 52601
319-753-1647

Administrative Record is located at

Administrative Record is online at www.iaaap.adminrecord.com

Hard copy is located at the IAAAP DERP Library.
17571 DMC Hwy 79
Middletown, IA 52638
319-753-7705

Information Repository is located at

Iowa Army Ammunition Plant
17571 DMC Hwy 79
Middletown, IA 52638
319-753-7705

Current Technical Assistance for Public Participation (TAPP): N/A

TAPP Title: N/A

Potential TAPP: N/A