JOLIET ARMY AMMUNITION PLANT

Army Cleanup Program

Installation Action Plan Final June 2024

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STATEMENT OF PURPOSE

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

INSTALLATION OVERVIEW

Installation Name: JOLIET AAP Installation City: JOLIET Installation County: WILL Installation State: IL Regulatory Participation - Federal: US Environmental Protection Agency (USEPA), Region V Regulatory Participation - State: Illinois Environmental Protection Agency (IEPA)

ACRONYMS

Acronym	Definition
AST	Aboveground Storage Tank
BTF	Bioremediation Treatment Facility
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
COC	Contaminant of Concern
CRL	Cleanup Restoration & Liabilities
СҮ	Cubic Yard
DD	Decision Document
DNT	Dinitrotoluene
EE/CA	Engineering Evaluation/Cost Analysis
ENV	Environmental
FOST	Finding of Suitability to Transfer
FS	Feasibility Study
ft bgs	feet below ground surface
FYR	Five-Year Review
GMZ	Groundwater Management Zone
GRU	Groundwater Remediation Unit
IAP	Installation Action Plan
ID	Identification
IEPA	Illinois Environmental Protection Agency
IR	Installation Restoration
IRA	Interim Remedial Action
JOAAP	Joliet Army Ammunition Plant
LAP	Load And Packing
LTM	Long-Term Management
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
MFG	Manufacturing
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
NPL	National Priority List
ORSC	Ordnance Removal and Site Characterization
PA	Preliminary Assessment
PR	Periodic Review
PVC	Polyvinyl Chloride
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)

Acronym	Definition
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDF	Recycling and Disposal Facility
RG	Remedial Goals
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SC	Site Closeout
SI	Site Inspection
SRU	Soil Remediation Unit
ТАРР	Technical Assistance for Public Participation
TCRA	Time Critical Remedial Action
TNT	Trinitrotoluene
TSCA	Toxic Substances Control Act
USACE	US Army Corps of Engineers
USDA	US Department of Agriculture
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
WCLF	Will County Landfill

PHASE TRANSLATION TABLE

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

PROGRAM SUMMARY

Number of Open Sites with Response Complete/Total Open IR Sites: 1/12 Number of Open Sites with Response Complete/Total Open MR Sites: 0/3 Number of Open Sites with Response Complete/Total Open CC Sites: 0/0

SITE-LEVEL INFORMATION

17306.1001_JAAP-001_SOUTHERN ASH PILE

Env Site ID: JAAP-001			
Cleanup Site: SOUTHERN ASH PILE			
Alias: JAAP-001	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 9/30/2007	SI:	12/31/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	1/31/1990	10/31/1997
RC Reason: Not assigned	RD:	6/30/1998	6/30/1999
SC Date: 9/30/2054	IRA:	11/30/1987	4/30/1997
Program: ENV Restoration, Army	RA(C):	4/30/1999	9/30/2007
Subprogram: IR	RA(O):	9/30/2007	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 32			
RRSE:			

MRSPP: N/A

Site Narrative: The Southern Ash Pile site M1 encompasses an area of approximately 68 acres though the pile itself covers about eight acres in the southwestern corner of the manufacturing area. The Southern Ash Pile was used from 1965 through 1974. The pile contains the solid residue from the incineration of red water and is comprised primarily of inorganic salts, mostly sodium sulfate. Media of concern are groundwater, surface water, and soil, which were impacted by previous discharges. The pile was initially capped in 1976. The ash pile was covered with a polyvinyl chloride (PVC) barrier, 12 inches of fill, and 6 inches of topsoil. The cap has been repaired twice due to settling, which caused breaching of the cap. A flexible membrane cap was installed in 1996 and then replaced in 1999. Both groundwater and surface water have been impacted by past discharges. A groundwater management zone (GMZ) and remedial goals (RG) were established in the 1998 record of decision (ROD) and the GMZ was revised in FY03. This site is part of Soil Remediation Unit (SRU) 6 for landfills. The landfill cap was removed and contents (approximately 326,000 cubic yards (cy)) were excavated in 2007 and disposed of at the Will County Landfill (WCLF). This site is intended to be transferred to the US Department of Agriculture (USDA).

Cleanup and Exit Strategy - Groundwater use restrictions, monitored natural attenuation (MNA) monitoring, and five-year reviews will continue indefinitely until regulatory levels are met. Groundwater monitoring will also include the constituent 14-Dioxane.

17306.1005_JAAP-005_M5 - TETRYL PRODUCTION AREA

Env Site ID: JAAP-005			
Cleanup Site: M5 - TETRYL PRODUCTION AREA			
Alias: JAAP-005	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 9/30/1999	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	12/31/1987	10/31/1997
RC Reason: Not assigned	RD:	6/30/1998	6/30/1999
SC Date: 9/30/2054	IRA:		
Program: ENV Restoration, Army	RA(C):	7/31/1999	9/30/1999
Subprogram: IR	RA(O):	9/30/1999	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 32			
RRSE:			

MRSPP: N/A

Site Narrative: Soils contaminated with explosives (5,900 cy) were removed in September 1999 and taken to JAAP-004 for remediation. No further remedial action is required for soil. A closure document was submitted in FY2000. For groundwater, the final 1998 ROD established a GMZ and RG. The property was transferred to the state of Illinois for use as an industrial park in 2001.

17306.1006_JAAP-006_M6 TNT DITCH COMPLEX

Env Site ID: JAAP-006	
Cleanup Site: M6 TNT DITCH COMPLEX	
Alias: JAAP-006	Ph
Regulatory Driver: CERCLA	РА
RIP Date: 9/30/2005	SI:
RC Date: 9/30/2054	RI/
RC Reason: Not assigned	RD
SC Date: 9/30/2054	IRA
Program: ENV Restoration, Army	RA
Subprogram: IR	RA
NPL Status: Yes	LTI
Hazardous Ranking Score: 32	
RRSE:	
MRSPP: N/A	

Phase	Start	End
PA:	11/30/1987	3/31/1988
SI:	11/30/1987	3/31/1988
RI/FS:	12/31/1987	10/31/1997
RD:	6/30/1998	6/30/1999
IRA:	6/30/1996	8/31/1997
RA(C):	6/30/1999	9/30/2005
RA(O):	9/30/2005	9/30/2054
LTM:		

Site Narrative: Site M6 covers approximately 271 acres in the central part of the Manufacturing (MFG) Area. Trinitrotoluene (TNT) and dinitrotoluene (DNT) were produced at the site during World War II, the Korean War, and the Vietnam War. The site is owned by CPI LLC (western half and southern section) and BNSF (eastern section). The final 1998 ROD established a GMZ and remedial goals. The property has been transferred to the state of Illinois JADA (Joliet Arsenal Development Authority) for use as an industrial park. Though the Army estimated 175,000 cy of soils were contaminated with explosives, 191,462 tons of soil with explosives were removed and taken to site JAAP-004 for remediation. JAAP-004 is located in the Deer Run Industrial Park and is within the GMZ for Groundwater Remediation Unit (GRU) 2. During each inter-war period, the plant mission was a research and development role in which explosive compounds such as nitroxylenes were produced. TNT production ceased in 1977. Twelve parallel TNT batch production lines were initially constructed in the TNT Ditch Complex from south to north with a total production capacity of 32,000,000 lbs. of TNT per month. The principal buildings in each TNT production line were oriented east to west. The batch production lines were constructed in pairs; each line began with a mono-house followed by a bi-house and a tri-house for the nitration of toluene. Crude TNT was manufactured in a three-step process by the successive chemical addition of nitric acid to a toluene base product using sulfuric acid as a catalyst. The crude TNT was transferred to the wash house for neutralization with sodium carbonate (soda ash) and purification using sodium sulfite (sellite). The crystallized TNT was then dried, washed, and flaked prior to being packaged in boxes. A conveyor finally transferred the boxed TNT to the nail house where the containers were sealed. Six DNT production lines with DNT as the final product were constructed between the paired TNT production lines. At each DNT production line the mono- and bi-nitration steps were performed in a combined nitrating building. DNT purification was performed in a sweating and graining building located to the west of the DNT nitrating building. Total capacity for DNT production was 7,200,000 lbs. per month. In 1974, batch lines 11 and 12 at the north end of Site M6 were demolished and three continuously operational TNT production lines were constructed in their place. TNT process wastewater from each trihouse and wash house known as red water was initially discharged from wooden holding tanks to open clay-lined ditches that drained into a 9,100 feet long TNT ditch. The original wastewater drainage system was replaced in 1965 by a system of wooden flumes constructed in the TNT ditch. The wash house red water was then diverted to the Red Water Area (Site M7) for treatment. DNT-contaminated wastewater from the bi-houses and DNT sweating and graining buildings was discharged via wooden settling tanks into open troughs and ditches that flowed directly into the storm water sewer system and discharged into the TNT Ditch. Wastewater discharged directly to the TNT ditch was not treated in the Red Water Area and flowed directly into Grant Creek. Additional site investigations were conducted in 1999 at a Continuous Lines Area that was not previously covered in the RI/FS but was suspected of containing soil contamination. The results indicated that explosives contamination was limited to discrete locations and in soil beneath an elevated red water discharge pipe. Prior to remediation explosives Contaminant of Concern (COC) included 24-DNT; 26-DNT; 2-NT; 135-TNB; 246-TNT; and RDX. Areas exceeding RGs included soils adjacent to each of the TNT wash houses, bi-houses, tri-houses, between the wash houses and TNT ditch at AFR Buildings, and around the perimeter of a laboratory building. Soil analytical results for SRU3 indicated that 24-DNT, 246-TNT, arsenic, beryllium, and lead exceeded compound-specific RGs. Approximately 86,575 cy of SRU1 soils and 60,703 cy of SRU3 soils (147,278 cy total) were excavated and treated at the Bioremediation Treatment Facility (BTF). During 1999 remedial action (RA) activities, 14,880 lbs. of explosives raw product were excavated, placed in a secured bunker, and ultimately disposed of by the Bureau of Alcohol Tobacco and Firearms. During the 2002 RA activities, nuggets of raw explosives were handpicked and dissolved in water. The resulting solutions were added to soil destined for treatment at the BTF. Soil with TNT concentrations greater than 100,000 parts per million (ppm) from the TNT ditch were blended with soils containing lesser amounts of TNT prior to treatment. Soil remedial action objectives (RAO) were met.

17306.1007_JAAP-007_M7 - RED WATER AREA SOUTH OF TN

Env Site ID: JAAP-007			
Cleanup Site: M7 - RED WATER AREA SOUTH OF	TN		
Alias: JAAP-007	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 1/31/2002	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	12/31/1989	10/31/1997
RC Reason: Not assigned	RD:	6/30/1998	6/30/1999
SC Date: 9/30/2054	IRA:	11/30/1987	11/30/1993
Program: ENV Restoration, Army	RA(C):	4/30/2001	12/31/2001
Subprogram: IR	RA(O):	1/31/2002	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 32			
RRSE:			

MRSPP: N/A

Site Narrative: The final 1998 ROD established a GMZ and remedial goals. The property was transferred to the state of Illinois, for use as an industrial park. The Red Water Lagoon was remediated in 1985. Explosive soils in the TNT ditch and red water treatment area (16,000 cy) were removed and taken to site JAAP-004 for bioremediation in 2001. The site is located within the Deer Run Industrial Park. The remediated area located on the northern section of the site is owned by BNSF. The remainder is owned by CPI LLC. Site M7 is within the GMZ for GRU2. Site M7 the Red Water Incineration Area encompasses approximately 49 acres in the central part of the MFG area immediately south of the TNT Ditch Complex (Site M6). Former facilities included three separate groups of storage tanks, pumping stations, evaporators, incinerators, and a lagoon. Beginning in 1965, these facilities were used to treat wastewater (red water) containing explosives residues and derivatives produced in the TNT manufacturing process. Red water from TNT wash houses was diverted from the TNT ditch into wooden flumes. It was collected in storage tanks; overflow was stored in a 3.3-acre lagoon (4.1-million-gallon capacity), which was remediated in 1985. Explosives-contaminated soils were identified throughout the east side of the site at a depth of less than 1 ft except for the drainage area located in the northwest corner of the site where contamination extended approximately to bedrock three to eight feet below ground surface (ft bgs). An RA was conducted from 1983 to 1985 to remove contaminated surface water and sediments from a red water lagoon. The COCs for SRU1 soil included 135-TNB; 24-DNT; 26-DNT; 246-TNT; and RDX. Soils contaminated with red water were considered listed wastes (RCRA waste code K047) and DNT production wastewater (RCRA waste code K111). Approximately 16,855 cy of SRU1 soils were excavated, screened on site, and transported to the BTF for treatment. Backfilling and revegetation were not conducted because the site was transferred for commercial development. Approximately 6 inches of sediment (75 cy) were removed from a stained area adjacent to the west boundary of a previously delineated area (Cattail Area). The excavated sediment was treated at the BTF. Underground piping and sumps in the middle and eastern sections of the site were remediated (Pipe and Sump Area). Pipes and components were treated in a flash-burning building in the load and packing (LAP) area and then

disposed of off-site, which generated approximately 137 cy of contaminated soil that was also treated at the BTF. The northwest section of the excavated area was backfilled with clean soil from the site. Soil RAOs were met, and property was transferred.

17306.1008 JAAP-008 ACID MANUFACTURING AREA

Env Site ID: JAAP-008			
Cleanup Site: ACID MANUFACTURING AREA			
Alias: JAAP-008	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 1/31/2000	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	3/31/1988	10/31/1997
RC Reason: Not assigned	RD:	6/30/1998	6/30/1999
SC Date: 9/30/2054	IRA:	6/30/1996	8/31/1996
Program: ENV Restoration, Army	RA(C):	6/30/1999	7/31/1999
Subprogram: IR	RA(O):	1/31/2000	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 32	<u>.</u>		•
RRSE:			

MRSPP: N/A

Site Narrative: Site M8 covers an area of approximately 304 acres in the central portion of the MFG Area. On August 10, 2000, the site was transferred to the state of Illinois. Following the land transfer, the state of Illinois sold the site. Subsequent activities included the construction of an intermodal rail facility that is owned and operated by BNSF Railroad. According to the Finding of Suitability to Transfer (FOST) (MWH 2001a) there were no exceedances of soil industrial RGs. Site M8 contained four areas where nitric and sulfuric acids were produced and combined into various strength mixes for use in the manufacturing of DNT, TNT, and tetryl. It is located within the GMZ for GRU2. Acid Area 3 was located in the northeast corner of the site. The production of oleum (fuming sulfuric acid), strong nitric acid, and other acids used in the production of explosives were the principal activities in this area. Principal structures and operations included an Oleum Plant, Northern Ammonia Oxidation Plant, and Northern Acid Area. The Oleum Plant was located in the northern portion of Acid Area 3. The southern half of the plant was used for the receiving and storage of bulk sulfur. Raw sulfur was readily apparent throughout this area and along a southern railroad spur. The site was classified as SRU7 - Sulfur. No RCRA hazardous wastes were identified at the site. Sulfur is not a CERCLA regulated waste and was not identified in the October 1998 ROD as a risk to industrial receptors in any media at the site. Sulfur was removed from surficial soils during liquidation activities at the site prior to the transfer of property to the state of Illinois. The remediation of sulfur at the site was required by the 1998 ROD. Sulfur is not a CERCLA-regulated substance, and the cleanup was conducted outside of the US Army's CERCLA-based program. The 1998 final ROD established a GMZ and remedial goals. Sulfur was removed in 1999. Four wells are monitored semiannually.

17306.1009_JAAP-009_NORTHERN ASH PILE

Env Site ID: JAAP-009			
Cleanup Site: NORTHERN ASH PILE			-
Alias: JAAP-009	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 9/30/2007	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	3/31/1988	10/31/1997
RC Reason: Not assigned	RD:	6/30/1998	7/31/1999
SC Date: 9/30/2054	IRA:	11/30/1987	11/30/1993
Program: ENV Restoration, Army	RA(C):	4/30/1999	9/30/2007
Subprogram: IR	RA(O):	9/30/2007	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 32	<u> </u>	- L	
RRSE:			

MRSPP: N/A

Site Narrative: Northern Ash Pile is comprised of approximately six acres in the north end of the manufacturing area. The landfill portion of the site is owned by the US Army and is not being used. The eastern portion of the site is owned by CPI LLC. The site is located within the GMZ for GRU2. The ash pile was 10 to 15 ft high. It was estimated to contain 124,000 cy of material. Upon closure, the ash pile was originally covered with PVC barriers, 12 inches of fill, and 6 inches of topsoil. This property was transferred to the state of Illinois. It is part of SRU6 landfills. Site M9 is comprised of approximately 20 acres located on an escarpment in the north-central part of the MFG area. The Northern Ash Pile was constructed during 1966 and 1967 as a landfill for ash residues from the incineration of TNT manufacturing wastes. Red water ash in the pile was derived from K047-listed hazardous wastes. The area was first capped in 1968. As a result of erosion, the site was recapped in 1985 with an additional 12 inches of clay and six inches of topsoil. During routine inspections of the cap, a leachate seep south of the pile was observed stressing vegetation and staining soils in a drainage channel. The Illinois Environmental Protection Agency (IEPA) requested interim measures to prevent the leachate seepage until permanent closure activities could be initiated. The interim measures were performed from March 31 to May 10, 1999, and included the installation of a leachate collection and recirculation system. Greater than anticipated leachate volumes prompted the US Army to conduct additional interim measures during July and August 2001. Three to four feet of treated soil from Site M4 was spread and compacted over the ash pile surface. This action reduced the volume of leachate being collected. The site is part of SRU 6 landfills. Characterization activities performed during the Phase 2 RI (Dames and Moore 1993a) and a subsequent investigation performed in 1999 (MWH 1999b) did not identify RCRA characteristic wastes (MKM 2007b). Sodium and water-soluble sodium sulfate were present in the ash in concentrations greater that background levels. IEPA notified the US Army that since the ash residues no longer exhibited the characteristic of reactivity (for which they were listed), they were not hazardous wastes regulated under 35 IAC 721.103(a)(2)(C). RA activities were conducted from November 15, 2005, to April 28, 2006. The ash pile was excavated, and 50,535 cy of primarily red water ash disposed of at the Prairie View Recycling and Disposal Facility (RDF). Components of the leachate collection and recirculation system were removed and either used at the BTF or disposed of at the Waste Management Calumet City Industrial Disposal Facility. Prairie View RDF field observations by US Army Corps of Engineers (USACE), US Environmental Protection Agency (USEPA), and IEPA verified that the red water ash has been completely removed. Approximately 34,850 cy of treated soil from the BTF and reused clean cover soil was used as backfill. The restored area was hydroseeded using a USDA/FS-approved grass mixture. Closure of Site M6 for SRU6 soil is documented in the Final M9 Remedial Action Completion Report Soils Operable Unit M9 Northern Ash Pile.

17306.1011_JAAP-011_M11 LANDFILL

Env Site ID: JAAP-011
Cleanup Site: M11 LANDFILL
Alias: JAAP-011
Regulatory Driver: CERCLA
RIP Date: 9/30/2007
RC Date: 9/30/2054
RC Reason: Not assigned
SC Date: 9/30/2054
Program: ENV Restoration, Army
Subprogram: IR
NPL Status: Yes
Hazardous Ranking Score: 32
RRSE:
MRSPP: N/A

Phase	Start	End
PA:	11/30/1987	3/31/1988
SI:	11/30/1987	3/31/1988
RI/FS:	3/31/1988	10/31/1997
RD:	6/30/1998	6/30/1999
IRA:	11/30/1987	11/30/1993
RA(C):	9/30/2004	9/30/2007
RA(O):	9/30/2007	9/30/2054
LTM:		

Site Narrative: Site M11 is located in the southwest portion of the MFG area and encompasses 133 acres immediately east and south of the former explosives burning grounds (Site M2). The landfill is situated on a former gravel quarry that was operated as an uncontrolled dump during previous JOAAP operations. COCs are arsenic and lead in both soil and groundwater. Three dump areas were used- a south area, a northeast area, and a northwest area. Construction materials and miscellaneous debris placed in the quarry included asbestos insulation, rubble, 55-gallon drums, creosote-treated wood paint cans, and scrap metal. Fill was identified to depths greater than 2 ft bgs. The M11 Landfill is approximately 10.5 acres and occupies the northwest dump area. The area was mined for gravel and later received a variety of wastes. The landfill area of approximately 20 acres was used from 1952 to 1978 and contains mostly construction debris. Manganese and sulfate waste pose a risk to the groundwater. RA activities were conducted between July 16, 2006, and August 15, 2008. Soil and debris from the south (67,965 cy) and northeast (41,755 cy) areas were excavated and consolidated in the northwest area. Treated soil from the BTF and clean soil from off-site locations were used for backfill at the south and northeast area excavations. A RCRA Subtitle C cap was placed on the consolidated fill, which included the following elements- three gas vents, general fill consisting of stripped soil cover from the excavations and treated soil from the BTF (22,641 cy), a 6-inch granular grading layer (19,440 cy), geocomposite clay liner, linear low-density polyethylene geomembrane, geonet geocomposite, drainage layer, 30-inch thick rooting zone, 6-inch thick topsoil layer consisting of treated soil from the BTF and clean off-site fill, 12-inch thick rip rap layer along the perimeter of the landfill cap, five-wire barbed fence around the landfill perimeter with warning signs placed every 150 ft, and revegetation. Repairs were made in July and August 2008 and final seeding and mulching was completed in August 2008. Per Illinois Administrative Code, 30 years of monitoring is required for the landfill. The remaining 89 acres are managed as tall grass prairie and land use controls (LUCs) are reported annually by the USDA. 89 acres have been transferred to the USDA; the 11-acre landfill area is also intended to be transferred to the USDA. The site is owned by the US Army. Site M11 was classified as SRU6 landfills. RCRA characteristic

wastes are potentially present in the landfill as toxicity characteristic leaching procedure - extractable lead (RCRA waste code D008).

Cleanup and Exit Strategy - Activities include LUCs (soil and groundwater) cap maintenance, MNA, groundwater monitoring, and five-year reviews indefinitely until regulatory limits for unlimited use/unlimited exposure are met.

17306.1013_JAAP-013_M13 GRAVEL/EXCAVATION PITS

Env Site ID: JAAP-013
Cleanup Site: M13 GRAVEL/EXCAVATION PITS
Alias: JAAP-013
Regulatory Driver: CERCLA
RIP Date: 9/30/2007
RC Date: 9/30/2007
RC Reason: All Required Cleanup(s) Completed
SC Date: 9/30/2054
Program: ENV Restoration, Army
Subprogram: IR
NPL Status: Yes
Hazardous Ranking Score: 32
RRSE:
MRSPP: N/A

-		
Phase	Start	End
PA:	11/30/1987	3/31/1988
SI:	11/30/1987	3/31/1988
RI/FS:	3/31/1988	10/31/1997
RD:	6/30/1998	6/30/1999
IRA:		
RA(C):	9/30/2004	9/30/2007
RA(O):		
LTM:	9/30/2007	9/30/2054

Site Narrative: This area totals 130 acres in the northern portion of the MFG area and contains four pits that were originally mined for gravel. Later the unused pits received various disposals. Thirteen acres required a RCRA Subtitle D cap. The soil is contaminated with metals (beryllium and lead) and semi-volatile organic compounds (benzo(a)pyrene). The site is part of SRU6 landfills. In 2007, construction of a RCRA Subtitle D cap began and was completed in 2008. In August 2000, the acreage outside of the landfill area was transferred to the state of Illinois and has been sold to private companies.

Cleanup and Exit Strategy - Continue quarterly landfill inspections and monitoring indefinitely.

17306.1019_JAAP-0L1_GROUP 61 TNT - RIDGE & FURROW

EIN SILE ID. JAAF-ULI			
Cleanup Site: GROUP 61 TNT - RIDGE & FURROW		-	
Alias: JAAP-0L1	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 6/30/2006	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	1/31/1990	12/31/2003
RC Reason: Not assigned	RD:	6/30/1998	6/30/2005
SC Date: 9/30/2054	IRA:		
Program: ENV Restoration, Army	RA(C):	8/31/1999	6/30/2006
Subprogram: IR	RA(O):	6/30/2006	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 35			I
RRSE:			

MRSPP: N/A

Env Site ID: 1AAD 011

Site Narrative: Site L1 is an 80-acre site centrally located in the northern portion of the LAP area. The site is owned by the US Army and is not being used. This site is intended to be transferred to the USDA. It is located within a GMZ for GRU1. COCs included 135-TNB and 246-TNT. Building Group 61 was originally used for crystallizing ammonium nitrates and was extensively modified to function as a shell renovation and 135-TNB recovery plant until 1945. In April 1946, the facility was reactivated to reclaim TNT. Washout operations involving larger munitions were performed outside of Building 61-35. The solids that settled in a sump were sent to Site L2 (Explosive Burning Grounds) while the overflow from the sump (pink water) was discharged to an adjacent 4.3-acre ridge-and-furrow system (or evaporating bed). Explosive compounds in the soil were present in a ridge-and-furrow impoundment at the westernmost of two newer ponds, an area south of the washout building, and in soil around the sump. The majority of SRU1 soil was present in the ridge-and-furrow system, a western lagoon south of the evaporation beds, an area south of a former washout building, and around a building sump. RA activities were conducted from October 2005 to March 2006. A total of 11,634 cubic yards (cy) of unscreened SRU1 soil. At SRU4 soil, two transformers were removed in August 1990 from an area east of Building 61-4 that were suspected to have leaked oil-containing PCBs onto site soil. PCB 1260 was the COC for SRU4 soil. RA activities were conducted between August and October 1999. A total of 155 cy of non-Toxic Substances Control Act (TSCA) regulated soil was excavated and disposed of at the Laraway RDF in Elwood, Illinois. The excavations were backfilled using clean soil from the site. Backfill was placed and graded to drain consistent with adjacent terrain. Seed and mulch were used to establish vegetation in the re-graded areas consistent with surrounding grasses. At SRU5 soil, stained soils containing petroleum hydrocarbons were identified in the vicinity of aboveground storage tanks (ASTs) located west of Building 61-1 and north of Building 61-2. Total petroleum hydrocarbons were the COC for SRU5 soil. RA activities were conducted from October 2005 to March 2006. A total of 1,895 cy of unscreened SRU5 soil were excavated and treated at Site M4 BTF. A total of 321 cy of concrete debris was excavated and disposed of at the Prairie View RDF. Soil for backfill was obtained from on-site locations. The excavations were

backfilled and regraded to promote proper drainage. The backfilled areas were allowed to naturally revegetate. According to the Final Second Five-Year Review Report for Soils Operable Unit (Aerostar 2009b), USEPA, and IEPA verified that all SRU1 and SRU5 RA activities were conducted in accordance with the Phase 2 - Remedial Design/Remedial Action Work Plan (MWH 2005). Closure of Site L1 for SRU1 and SRU5 soils is documented in the Final Closure Report Sites L1, L7, L8, L9, L10, L14, and M2 (MWH 2006b). Three ASTs were removed – two from an area north of Building 61-2 and one from an area west of Building 61-1. These areas correspond to the SRU5 remediation areas. Potential asbestos-containing material (ACM) consisting of roof tar material on the ground and transite panels at Buildings 61-2, 61-4, and 61-35 were removed and disposed of at the Prairie View RDF, part of GRU1 explosives in groundwater management zone established in the 1998 ROD.

17306.1020_JAAP-0L2_EXPLOSIVE BURNING GROUND

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Env Site ID: JAAP-0L2			
Cleanup Site: EXPLOSIVE BURNING GROUND			
Alias: JAAP-0L2	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 9/30/2007	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	1/31/1990	12/31/2003
RC Reason: Not assigned	RD:	6/30/1998	6/30/2005
SC Date: 9/30/2054	IRA:	6/30/1996	2/28/1997
Program: ENV Restoration, Army	RA(C):	4/30/2005	9/30/2007
Subprogram: IR	RA(O):	9/30/2007	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 32			
RRSE:			

MRSPP: N/A

Site Narrative: Site L2 is located in the west-central portion of the LAP area adjacent to Prairie Creek and Kemery Lake. The site is owned by the US Army and is not being used. The site is planned to be transferred to the US Forest Service/Mission Command Training Program (MNTP) simultaneously with MR sites. It is located within a GMZ for GRU1. The operational area covered approximately five acres and contained six east-west burning pads each approximately 650 ft long by 50 ft wide where explosives and associated wastes from other LAP sites were burned. The COCs for SRU1 soil included 24-DNT; 135-TNB; 26-DNT; and RDX. SRU1 was excavated and disposed of at the Prairie View RDF. Three north-south burning pads (SRU1) were located east of this area which were subsequently reconfigured into one pad. Oil and pits were constructed on the southern portion of the pads. Burning pads were constructed with gravel and fitted with electric igniters for remote operation. Three popping furnaces (SRU2), where small ammunition was detonated, were located at the southwest portion of the site. During operations, metal waste from the furnaces was removed and sent to a salvage yard at Site L5. The Explosive Burning Grounds also contained three solvent and oil disposal pits (each less than 0.25 acre), located adjacent to the burning pads, that were occasionally used to burn waste oil. These pits were remediated in 1996 as part of a removal action conducted by the US Army. Munitions, and explosives of concern (MEC) including fuses and other items were identified on the burning pads and buried in an area north of the burning pads. The MEC was disposed of during the removal action and a complete MEC sweep was performed. An April 30, 2007, letter, confirmed the MEC removal action was included in the RA closure report. Drainage features include two ditches that flow from the northern portion of the burning pads to Kemery Lake and a gully at the southwestern corner of the site that receives runoff from the popping furnace area and southern portions of the site. RA activities and MEC clearance were conducted between Feb. 12, and Oct. 31, 2007. The following additional activities were performed during the RA-Munitions debris (13,690 lbs.) and range residue (4,949 lbs.) were recovered and disposed of at the Belson Steel Center Scrap facility in Bourbonnais Illinois. Transite panels from the popping furnace roofs were removed and disposed of off-site. The popping furnaces were cut up and disposed of at the Prairie

View RDF. 100 gallons of diesel fuel from a 2,000-gallon AST were mixed with the excavated soils that were disposed of at the Prairie View RDF. Backfill was obtained from an earthen berm located at Site L7. The backfill was placed compacted and re-graded to drain consistent with the adjacent terrain. The backfilled areas were allowed to naturally revegetate.

17306.1021_JAAP-0L3_DEMO AREA

Env Site ID: JAAP-0L3			
Cleanup Site: DEMO AREA			
Alias: JAAP-0L3	Phase	Start	End
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988
RIP Date: 9/30/2008	SI:	11/30/1987	3/31/1988
RC Date: 9/30/2054	RI/FS:	1/31/1990	12/31/2003
RC Reason: Not assigned	RD:	6/30/1998	6/30/2005
SC Date: 9/30/2054	IRA:	10/31/1996	9/30/2008
Program: ENV Restoration, Army	RA(C):	10/31/2004	9/30/2008
Subprogram: IR	RA(O):	9/30/2008	9/30/2054
NPL Status: Yes	LTM:		
Hazardous Ranking Score: 35		•	
RRSE:			

MRSPP: N/A

Site Narrative: This site comprises 50 acres in the west central portion of the LAP area. This site is intended to be transferred to the USDA. Site L3 contained SRU2 (metal in soil), SRU3 (explosives and metals in soils), and SRU6 (landfill) and is within the GMZ for GRU1. It was used for open combustion of refuse and contained a one-acre fire training site. Groundwater standards were set by the 1998 ROD. Groundwater RGs for this site have not been met. The landfill portion of the site was renamed JAAP-001-R-03 due to munitions being present.

17306.1033_JAAP-L14_GROUP 4 - FUSE PRODUCTN/SMOKELE

Env Site ID: JAAP-L14				
Cleanup Site: GROUP 4 - FUSE PRODUCTN/SMOKELE				
Alias: JAAP-L14	Phase	Start	End	
Regulatory Driver: CERCLA	PA:	11/30/1987	3/31/1988	
RIP Date: 6/30/2006	SI:	11/30/1987	3/31/1988	
RC Date: 9/30/2054	RI/FS:	1/31/1990	12/31/2003	
RC Reason: Not assigned	RD:	6/30/1998	9/30/2005	
SC Date: 9/30/2054	IRA:			
Program: ENV Restoration, Army	RA(C):	10/31/2004	6/30/2006	
Subprogram: IR	RA(O):	6/30/2006	9/30/2054	
NPL Status: Yes	LTM:			
Hazardous Ranking Score: 35				
RRSE:				

MRSPP: N/A

Site Narrative: Site L14 occupies 33 acres in the southwestern corner of the LAP area. This site is currently Army-owned and intended to be transferred to the USDA. The site produced various types of fuses. Mercury fulminate was reportedly stored at the site and loaded into the fuses in Building 4-14. After 1945, Building 4-14 was used for repackaging smokeless powder. According to Joliet AAP personnel, a sump north of Building 4-5 periodically overflowed, causing contamination in the area. A GMZ and RGs were established in the 1998 ROD. This site is in the 2004 ROD which established final soil remedial goals. In FY 2005, approximately 780 cy of explosives-contaminated soil was excavated and transported to site JAAP-004 for treatment.

17306.1055_JAAP-001-R-01_DEMOLITION AREA (L3)

Env Site ID: JAAP-001-R-01 Cleanup Site: DEMOLITION AREA (L3) Alias: # Regulatory Driver: CERCLA RIP Date: 10/31/2028 RC Date: 10/31/2028 RC Reason: Not assigned SC Date: 9/30/2058 Program: ENV Restoration, Army Subprogram: MR NPL Status: No Hazardous Ranking Score: 0 RRSE: N/A MRSPP: 9

Phase	Start	End
PA:	4/30/2003	5/31/2003
SI:	9/30/2003	5/31/2005
RI/FS:	9/30/2007	9/30/2025
RD:		
IRA:	10/31/2005	9/30/2008
RA(C):	10/1/2025	10/31/2028
RA(O):		
LTM:	10/31/2028	9/30/2058

Site Narrative: This 25-acre site consists of a buffer of about 200 feet surrounding the demolition area site in the west central portion of the LAP area that was used from 1940 to 1975. This Military Munitions Response Program (MMRP) site surrounds site JAAP-L3 and is currently undeveloped. It is scheduled to transfer to the USDA. The area is of concern because of the possibility of kick-out from demolition operations. The demolition area was used for open burn of combustible refuse and munitions crates and was also the location of a fire training area consisting of less than one acre. During the Ordnance Removal and Site Characterization (ORSC) study, one-half of a BLU-26/B munition was discovered as well as 30 other unexploded ordnance (UXO) items, including 40-millimeter (mm) rifle grenades, M-T83 PD fuses, 57 mm projectiles, 155 mm projectiles, and 105 mm projectiles. The site characterization was not completed; therefore, there is a possibility that more UXO are present at this site. A Time Critical Remedial Action (TCRA) was completed in 2015-2016 for MEC removal. Ninety-five tons of munition-contaminated soil was removed. The site was restored and has a subtitle equivalent cap. It was recommended to keep the long-term management (LTM) phase open. An explanation of significant difference (ESD) is complete.

Cleanup and Exit Strategy - The decision document (DD) will be completed in the RI/FS phase. Deed restrictions and an education plan will be implemented to ensure safety if someone encounters MEC. LUCs in the form of five-year reviews will continue indefinitely in LTM.

17306.1056_JAAP-002-R-01_EXPLOSIVE BURNING GROUND 1

Env Site ID: JAAP-002-R-01 Cleanup Site: EXPLOSIVE BURNING GROUND 1 Alias: # Regulatory Driver: CERCLA RIP Date: 10/31/2028 RC Date: 10/31/2028 RC Reason: Not assigned SC Date: 9/30/2058 Program: ENV Restoration, Army Subprogram: MR NPL Status: No Hazardous Ranking Score: 0 RRSE: N/A MRSPP: 9

Phase	Start	End
PA:	4/30/2003	5/31/2003
SI:	9/30/2003	5/31/2005
RI/FS:	9/30/2007	9/30/2025
RD:		
IRA:	10/31/2005	9/30/2008
RA(C):	10/1/2025	10/31/2028
RA(O):		
LTM:	10/31/2028	9/30/2058

Site Narrative: This 22-acre site consists of a 200 ft band surrounding the explosive burning ground in the west central portion of the LAP area. This site is intended to transfer to the USDA. The area was used between 1940 and 1975 and is of concern because of the possibility of kick-out from the burning grounds. The explosive burning ground was used for the open combustion of munitions and explosive wastes as well as contained popping furnaces and oil disposal pits. The burning grounds were suspected of containing BLU-26/B sub-munitions; however, only miscellaneous parts were located during the ORSC study. During the site characterization, 92 additional UXO items were discovered, including M48 nose fuses, M66 base fuses, miscellaneous fuse boosters, and 75mm projectiles. The site characterization was not completed so there is a possibility that more UXO are present. In 2007, an interim remedial action (IRA) of a one-foot-deep clearance across the site was completed. The draft final FS was submitted in May 2017.

Cleanup and Exit Strategy - The DD will be completed in the RI/FS phase. Deed restrictions and an education plan will be implemented to ensure safety if someone encounters MEC. LUCs in the form of five-year reviews will continue indefinitely in LTM.

17306.1060_JAAP-001-R-02_L2-L3 Extended Buffer

Env Site ID: JAAP-001-R-02 Cleanup Site: L2-L3 Extended Buffer Alias: # Regulatory Driver: CERCLA RIP Date: 10/31/2028 RC Date: 10/31/2028 RC Reason: Not assigned SC Date: 9/30/2058 Program: ENV Restoration, Army Subprogram: MR NPL Status: No Hazardous Ranking Score: 35.2 RRSE: N/A MRSPP: 3

Phase	Start	End
PA:	10/31/2007	11/30/2007
SI:	3/31/2008	9/30/2009
RI/FS:	10/31/2009	9/30/2025
RD:		
IRA:		
RA(C):	10/1/2025	10/31/2028
RA(O):		
LTM:	10/31/2028	9/30/2058

Site Narrative: In 1999, an engineering evaluation/cost analysis (EE/CA) was prepared, which recommended clearing a 200-foot buffer around IRP sites JAAP-OL2 and JAAP-OL3. The EE/CA was implemented, and the findings and recommendations of the EE/CA were carried through the initial MMRP process. The L2-L3 extended buffer is the result of physical observation of MEC beyond the boundaries set for JAAP-001-R-01 and JAAP- 002-R-01 during the IRA of those two sites. Based on the types of munitions found at the Installation Restoration (IR) and Munitions Response (MR) sites and the perimeter of the IR sites, a blast distance diagram was constructed. This resulted in an area of approximately 396 acres which does not include either the IR or MR sites inside this newly established site. USACE personnel walked the property and found MEC similar to that found at both the IR and MR sites. The site inspection (SI) was completed in FY15. After completion of the investigation of the 200 acres proposed in the SI, it was determined the investigation needed to be expanded to include the original proposed 396 acres.

Cleanup and Exit Strategy - The DD will be completed after the RI/FS phase. Deed restrictions and an education plan will be implemented to ensure safety if someone encounters MEC. LUCs in the form of five-year reviews will continue indefinitely in LTM.

SITE SUMMARY

SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
17306.1002	JAAP-002_EXPLOSIVE BURNING GROUNDS	10/31/2006
17306.1003	JAAP-003_FLASHING GROUNDS	6/30/2007
17306.1004	JAAP-004_LEAD AZIDE AREA	12/31/2007
17306.1010	JAAP-010_TOLUENE TANK FARMS (3)	4/30/2000
17306.1012	JAAP-012_SELLITE MANUFACTURING AREA	6/30/2007
17306.1014	JAAP-014_FORMER POND AREA	5/31/1993
17306.1015	JAAP-015_FORMER SEWAGE TREATMENT PLANT	5/31/1993
17306.1016	JAAP-016_MOTOR POOL AREA	5/31/1993
17306.1017	JAAP-017_LAUNDRY FACILITY	5/31/1993
17306.1018	JAAP-018_HERBICIDE STORAGE AREA	5/31/1993
17306.1022	JAAP-0L4_L4 LANDFILL AREA	4/30/2007
17306.1023	JAAP-0L5_SALVAGE YARD	9/30/2007
17306.1024	JAAP-0L6_GROUP 70 - MOTOR POOL	11/30/1997
17306.1025	JAAP-0L7_GROUP 1	6/30/2006
17306.1026	JAAP-0L8_GROUP 2	6/30/2006
17306.1027	JAAP-0L9_GROUP 3	8/31/2006
17306.1028	JAAP-GWM_INSTALLATION-WIDE LTM	3/12/2020
17306.1029	JAAP-L10_GROUP 3A	6/30/2006
17306.1030	JAAP-L11_TEST SITE	12/31/1999
17306.1031	JAAP-L12_DOYLE LAKE AREA	12/31/1994
17306.1032	JAAP-L13_GROUP 68	12/31/1994
17306.1034	JAAP-L15_GROUP 5	4/30/1996
17306.1035	JAAP-L16_GROUP 6	12/31/2002
17306.1036	JAAP-L17_GROUP 7	12/31/1999
17306.1037	JAAP-L18_GROUP 8	12/31/1994
17306.1038	JAAP-L19_GROUP 9	4/30/1996
17306.1039	JAAP-L20_GROUP 20	12/31/1994
17306.1040	JAAP-L21_SANITARY LANDFILL	12/31/1994
17306.1041	JAAP-L22_GROUP 25 RAILROAD CLASSIFICATIO	12/31/1994
17306.1042	JAAP-L23_DISPOSAL PIT AT GROUP 27	6/30/2007
17306.1043	JAAP-L24_GROUP 29	12/31/1994
17306.1044	JAAP-L25_GROUP 62	12/31/1994
17306.1045	JAAP-L26_GROUP 63	12/31/1994
17306.1046	JAAP-L27_GROUP 64	12/31/1994
17306.1047	JAAP-L28_GROUP 65	12/31/1994
17306.1048	JAAP-L29_RCRA HAZARDOUS STORAGE (GROUP 6	12/31/1994
17306.1049	JAAP-L30_GROUP 66A	12/31/1994
17306.1050	JAAP-L31_EXTRACTION PITS	12/31/1994
17306.1051	JAAP-L32_GROUP 60	10/31/1995
17306.1052	JAAP-L33_PVC AREA	12/31/1994
17306.1053	JAAP-L34_FORMER BURNING AREA	12/31/1994
17306.1054	JAAP-L35_FILL AREA	12/31/1994

CRL ID	Site Name	Site Closeout Date
17306.1059	PBC at JOLIET_PBC	12/31/2014
17306.1057	JAAP-003-R-01_TRAINING AREA 7	5/31/2005
17306.1058	JAAP-004-R-01_FORMER BURNING AREA (L34)	12/31/2019
17306.1061	JAAP-001-R-03_CAPPED L3 AREA	3/12/2020

COMMUNITY INVOLVEMENT

Community Involvement Plan (Date Last Reviewed):	11/1/2015		
Technical Review Committee Establishment Date:	N/A		
Restoration Advisory Board (RAB) Establishment Date:	12/31/1995		
RAB Adjournment Date:	9/1/2007		
RAB Adjournment Reason:	There is no longer sufficient, sustained community interest		
Reasons for Not Establishing RAB:	N/A		
RAB Date of Solicitation from Community:	N/A		
RAB Results of Solicitation:	N/A		
Current Technical Assistance for Public Participation (TAPP):	N/A		
TAPP Title:	N/A		
Potential TAPP:	N/A		
Administrative Record Location:	20612 W Elwood Manhattan Rd, Elwood, IL 60421		
Information Repository Location:	20612 W Elwood Manhattan Rd, Elwood, IL 60421		

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	FYR	9/12/2017	12/4/2019	N/A	N/A	Remedies are protective of human health and the environment
Underway	FYR	9/21/2023	09/28/2024	N/A	N/A	N/A