HOLSTON ARMY AMMUNITION PLANT

Army Cleanup Program

Installation Action Plan Final

June 2024

TABLE OF CONTENTS

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: HOLSTON ARMY AMMUNITION PLANT

Installation City: KINGSPORT

Installation County: HAWKINS, SULLIVAN

Installation State: TN

Regulatory Participation - Federal: N/A

Regulatory Participation - State: Tennessee Department of Environment & Conservation (TDEC)

ACRONYMS

Acronym	Definition
AOC-GW	Area of Concern-Groundwater
AST	Aboveground Storage Tank
bgs	below ground surface
CAO	Corrective Action Order
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CMI(C)	Corrective Measures Implementation-Construction
CMI(O)	Corrective Measures Implementation-Operation
CMS	Corrective Measures Study
CRL	Cleanup Restoration & Liabilities
CS	Confirmation Sampling
cy	cubic yards
DCS	Deputy Chief of Staff
DES	Design
ENV	Environmental
ER,A	Environmental Restoration, Army
FS	Feasibility Study
FY	Fiscal Year
FYR	Five-Year Review
HRS	Hazard Ranking Score
HSAAP	Holston Army Ammunition Plant
IAP	Installation Action Plan
ID	Identification
IM	Interim Measure
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
MCL	Maximum Contaminant Level
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
MW	Monitoring Well

Acronym	Definition
NFA	No Further Action
NPL	National Priorities List
PA	Preliminary Assessment
PFAS	Per- and Polyfluoroalkyl Substances
PR	Periodic Review
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Royal Demolition Explosives
RFA	Resource Conservation and Recovery Act Facility Assessment
RFI	Resource Conservation and Recovery Act Facility Investigation
RIP	Remedy-In-Place
RRSE	Relative Risk Site Evaluation
RSL	Risk Screening Levels
SB	Statement of Basis
SC	Site Closeout
SI	Site Inspection
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TDEC	Tennessee Department of Environment and Conservation
VOC	Volatile Organic Compound
WWII	World War II

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: 9/10

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

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

SITE-LEVEL INFORMATION

47305.1001_HSAAP-01_MISC. LANDFILLS

Env Site ID: HSAAP-01

Cleanup Site: MISC. LANDFILLS

Alias: SWMU-24

Regulatory Driver: RCRA-C

RIP Date: 5/31/2005

RC Date: 5/31/2005

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	2/28/1991	8/31/1991
CS:	9/30/1997	1/31/2000
RFI/CMS:	9/30/2004	5/31/2005
DES:	- -	- -
IRA:	- -	- -
CMI(C):	- -	- -
CMI(O):	- -	- -
LTM:	2/8/2023	9/30/2054

Site Narrative: B-200/Fly Ash Landfill (SWMU 24) was listed in the A.T. Kearney RFA as requiring confirmatory sampling. SWMU 24 is just south of Building 200, Steam Plant at Area B. It is not known when or for how long the site was used as a dumping ground. The area contains coal tar and fly ash. The size of the site is unknown but assumed to cover all 12 acres of the existing field. The waste was discovered in 1987 during construction of the coal handling facility which includes SWMUs 27 (sediment pond) and 56 (coal pile). Due to being active units, these two sites are not Environmental Restoration, Army (ER,A) eligible. The portion of the site used for coal handling activities was covered with compacted clay, topsoil, and revegetated in 1987 prior to coal activities starting. The Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Corrective Measures Study (CMS) phase in FY2005 for this site was met with complexity due to the presence of the active coal pile and sediment pond over top of the SWMU 24 landfill. Therefore, the Army requested that the site be placed under land use controls (LUC) until the coal handling facility is taken out of service. Tennessee Department of Environment and Conservation (TDEC) concurred with this direction. Results from a sample collected from monitoring well MW74 indicated the presence of SVOCs below drinking water standards when sampled as part of the SWMU 109 RFI (CCHSAPP-42/47305.1034). In October 2021, the coal fired steam plant and all associated facilities were decommissioned. This decommissioning was notified to TDEC, who found continuance of the LUCs for this site acceptable. The LUCs are signs, semi-annual inspections, and cap maintenance whenever coal tar surfaces. Semi-annual inspections are completed by Holston Army Ammunition Plant (HSAAP) staff. Cap repairs for this site are covered under site 47305.1022 (HSAAP-33) because they are part of the support contract. Small cap repairs have occurred as part of the 2018, 2020, and 2022 support contracts due to surfacing of coal tar. The cleanup of SWMUs 27 and 56 are being addressed under another program and are not part of this site. Formerly, this AEDB-R number included Construction Debris Landfill (SWMU 19), Rock Quarry Landfill (SWMU 20), Rock Dam Landfill (SWMU 21), and Interchange Yard/Fly Ash Landfill (AOC-H). SWMUs 19 and 20 were moved from this site to HSAAP-033 in 2003 because of the consolidation of the RFI for site-wide GW. SWMU 21 was moved from this site to HSAAP-027 in 2002 because of its close proximity. AOC-H was moved to HSAAP-020 in 2002

because of its close proximity and no further action (NFA) status. Current and future land use is industrial/commercial. There is low potential for off-site migration. Long-Term Management (LTM) including LUCs and periodic reviews for this site will continue indefinitely.

47305.1002_HSAAP-03_TAR (WWII) NEAR POND 3,AREA B T

Env Site ID: HSAAP-03

Cleanup Site: TAR (WWII) NEAR POND 3,AREA B T

Alias: SWMU 26,14

Regulatory Driver: RCRA-C

RIP Date: 5/15/2005

RC Date: 5/15/2005

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	2/28/1991	8/31/1991
CS:	- -	- -
RFI/CMS:	1/31/2001	5/31/2005
DES:	- -	- -
IRA:	7/15/2003	5/15/2005
CMI(C):	5/15/2005	5/15/2005
CMI(O):	- -	- -
LTM:	6/15/2005	9/30/2054

Site Narrative: The HSAAP-03 site covers the LTM costs for solid waste management units (SWMU) 14 and 26 under the RCRA Corrective Action program. These two SWMUs were given a formalized final remedy on Jan. 24, 2013 when the TDEC finalized the Corrective Action Order (CAO) Modification Case Number 03-HCA003. SWMU 14 was moved from HSAAP-22 to this site. SWMU 14 is located just across Wilcox Drive to the west of Area A's main production area. The landfill is 40 to 50 feet (ft) north of the south fork of the Holston River. The site is approximately three acres with depths of 10 to 15 ft and was used from 1949 to 1978. Discrete coal tar masses have been observed on the bank of the South Fork of the Holston River along the northwest side of this landfill. A Resource Conservation and Recovery Act facility investigation (RFI) was conducted in fiscal year (FY)01 to determine the amount of coal tar along the bank and assess the potential for migration of coal tar from the landfill to the river. The report confirmed the location of the coal tar masses and concluded that migration has not occurred from buried coal tar. The discrete coal tar masses on the riverbank are likely discards from dumping. The RFI report was submitted to TDEC and was approved. In August 2003, tar that had breached the SWMU 14 landfill cap was removed, and the cap was repaired. In 2012 a semiannual inspection program was instituted. In 2005, 10 tons of coal tar were removed and in 2008, six tons of coal tar were removed. In 2010, three cubic yards (cy) of coal tar were removed. Four cy of coal tar were removed from two locations following the inspections in 2012. No coal tar was observed in 2013 or 2014. Approximately 50 pounds of coal tar was removed in the fall of 2017. No coal tar has been removed since 2017. SWMU 26 is located between Sodium Nitrate Ponds 3 and 4 at Area B. When or for how long the site was used as a dumping ground is unknown. The RCRA Part B application states that during World War II (WWII), approximately 178 cy of coal tar were dumped down the railroad embankment and covered with either clay or mixed soil and railroad ballast. Small trees and undergrowth covered the site. The buried coal tar at SWMU 26 was discovered in the mid-1980s during replacement of a 36-inch water main. At that time, the excavated tar was removed solidified and disposed of in the sanitary landfill. The initial discovery revealed a site referred to as the WWII Tar Site which is approximately 300 ft by 100 ft; however, as the

actual dumping area could have extended throughout the length of the railroad track (about two miles at Area B and six miles in the corridor) the size or number of sites is unknown. Tar has also been found inside Pond 3 (considered part of the same material) and in the area behind Building 200 (HSAAP 01). All of these sites are off the embankment of the same rail line. A SWMU 26 RFI report was written in 1996 prior to issuance of CAO. A follow-up RFI was conducted to define the limits of the SWMU and assess release potential. The report identified the presence of one large mass (73,000 square feet) and one small mass (9,300 square feet) of coal tar buried at the site to a maximum depth of four ft. Soil contamination is limited to the area that contains buried coal tar. Groundwater data does not indicate a release of hazardous constituents from these coal tar masses. The RFI report was submitted to TDEC and was approved. At SWMU 26 75 cy of coal tar was removed in 2003 and in 2007 eight cy of coal tar was removed. A small area had to be seeded with grass in 2013 and 2014 due to bare spots caused by the previous removals. This site formerly included the Tar Burial Site (SWMU 25), SWMUs 97, 98, and 102. In 2002, SWMUs 25, 97, and 98 were moved from this site to HSAAP-08 because of their similarity to one another. In 2002, SWMU 102 was moved to HSAAP-22 because of its close proximity to the other sites and its NFA status. The statement of basis (SB) support documents was revised and resubmitted to TDEC for SWMUs 14 and 26 one in June 2007 and one in April 2009; respectively. TDEC finalized the modification to the CAO on Jan. 24, 2013. The final remedies for SWMUs 14 and 26 are LUCs. LUC restrictions are annual inspections, no disturbance of landfill cap or waste materials, no excavation without prior approval from TDEC, excavation with valid safety dig permit only, and signage. Institutional controls and inspections are conducted in accordance with the CAO. Current and future land use is industrial/commercial. There is low potential for off-site migration. LUCs inspections and periodic reviews for this site will continue indefinitely.

47305.1007_HSAAP-13_FLYASH LF,POND 1&2 SWMU 22,28,3

Env Site ID: HSAAP-13

Cleanup Site: FLYASH LF,POND 1&2 SWMU 22,28,3

Alias: SWMU-22,28

Regulatory Driver: RCRA-C

RIP Date: 9/15/2007

RC Date: 9/15/2007

RC Reason: Other

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	2/28/1991	8/31/1991
CS:	- -	- -
RFI/CMS:	1/15/2003	9/15/2006
DES:	- -	- -
IRA:	- -	- -
CMI(C):	12/15/2006	9/15/2007
CMI(O):	- -	- -
LTM:	10/15/2007	9/30/2054

Site Narrative: This site is located in Area B and lies south of Road 1921 and just north of the main line railroad. The site contained two ponds (SWMUs 38 and 39) and was initially used from 1969 to 1972 for liquid sodium nitrate storage. The ponds had a storage volume of 11.1 million gallons and nine million gallons, respectively. They were closed in the 1970s. Overlying these SWMUs is a sedimentation pond for the fly ash landfill (SWMU 28) and a RCRA closed fly ash landfill (SWMU 22) (5.5 acres 182,410 cy capacity). The fly ash landfill (SWMU 22) and the sedimentation pond (SWMU 28) are regulated under TDEC's Solid Waste Division. In fall 1997, the landfill was closed. SWMUs 22 and 28 are regulated as RCRA closed landfills and are inspected semiannually by TDEC's Johnson City Field Office. TDEC allows the inspection of SWMU 22 and 28 to suffice for SWMU 38 and 39. An RFI was completed and submitted to TDEC in September 2005. In October 2005, TDEC approved the RFI. A SB support document was accepted by TDEC in September 2007. TDEC finalized the modification to the CAO on Jan. 24, 2013. The modification identified the remedy as institutional controls and inspections for the site. Institutional controls and inspections are conducted in accordance with the CAO. Inspections will continue under post-closure care until 30 years are met. Inspections are completed by TDEC because this site overlaps with another site (post-closure care fly ash landfill a non - ER,A eligible site). If no state regulations are changed and post-closure care of the fly ash landfill ends, then ER,A would continue LTM of the ponds (SWMUs 38/39). However, TDEC has initiated draft regulation text that would change the landfill post-closure care period. If finalized amendments to the site strategy will be updated. LUCs include no disturbance of the landfill cap or waste materials excavation with valid safety dig permit only and signage. Current and future land use is industrial/commercial. There is low potential for off-site migration. LUCs inspections and periodic reviews for this site will continue indefinitely.

47305.1008_HSAAP-15_BURNING GRND SOUTH OF MFG AREA

Env Site ID: HSAAP-15

Cleanup Site: BURNING GRND SOUTH OF MFG AREA

Alias: SWMU-43/48

Regulatory Driver: RCRA-D

RIP Date: 4/15/2003

RC Date: 4/15/2003

RC Reason: Other

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	2/28/1985	8/31/1991
CS:	- -	- -
RFI/CMS:	1/31/2002	4/30/2003
DES:	- -	- -
IRA:	9/30/1985	10/31/1985
CMI(C):	1/15/2003	4/15/2003
CMI(O):	- -	- -
LTM:	5/15/2003	9/30/2054

Site Narrative: This site includes the general burning ground area (SWMU 43) including the former burning pads (SWMU 44), current burn pans (SWMU 45), burning cages (SMWU 46), burning piles (SWMU 47), former sludge dewater station (SWMU 48), and vehicle wash pad (SWMU 49). The only ERA eligible SWMUs listed above are the former piles (3, 4, and 5) at SWMU 47 and SWMUs 44, 48, and 49. SWMUs 43, 46, 48, and 49 received NFA in a letter from TDEC dated Dec. 18, 2008. SWMU 44 has LUCs. SWMU 45 is an active Hazardous Waste Treatment Unit regulated by TDEC/Solid Waste Johnson City Field Office. SWMU 47 piles 3, 4, and 5 have LUCs. LUCs include restricting land use to industrial, no excavation without prior approval from TDEC, excavation with valid safety dig permit only, and signage. These LUCs are verified and managed by HSAAP staff. Current and future land use is industrial/commercial. There is low potential for off-site migration. LUCs and periodic reviews will continue for this site indefinitely.

47305.1017_HSAAP-26_PESTICIDE AREAS NEAR B-105,B-1

Env Site ID: HSAAP-26

Cleanup Site: PESTICIDE AREAS NEAR B-105,B-1

Alias: SWMU-77-88

Regulatory Driver: RCRA-C

RIP Date: 9/15/2007

RC Date: 9/15/2007

RC Reason: Other

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	12/31/1990	2/28/1991
CS:	9/30/1997	12/31/1998
RFI/CMS:	1/31/2002	8/31/2006
DES:	- -	- -
IRA:	9/15/2004	9/15/2005
CMI(C):	9/15/2006	9/15/2007
CMI(O):	- -	- -
LTM:	10/15/2007	9/30/2054

Site Narrative: This site covers LTM for SWMUs 77, 78, 86, 87, and 88 under the RCRA Corrective Action program. These SWMUs were given a formalized final remedy on Jan. 24, 2013 when the TDEC finalized the CAO Modification Case Number 03-HCA003. SWMUs 77, 78, 86, and 87 are pesticide sites adjacent to Building 148. Pesticides and herbicides associated with Building 148 were detected in soil and groundwater samples collected from SWMUs 77, 78, 86, and 87. The groundwater is addressed in site-wide groundwater Area of Concern-Groundwater (AOC-GW) (HSAAP-33). The RFI was conducted in 2003. Pesticide contamination appeared confined to the immediate area of the site. There is no off-site contaminant migration in the groundwater. In 2004, a source removal was conducted; the residual tank liquids, the tanks, and associated piping were removed. An interim measure (IM) was performed in 2005 that included limited drain field soil removal. The drain field soil was excavated to below industrial and above residential action levels. A total of 325 cy of contaminated soil were removed and 37,000 gallons of contaminated water were treated at the Kingsport Wastewater Plant (the water consisted of runoff and rainfall). An IM report was submitted to TDEC in April 2006. In May 2006, TDEC approved the IM report. Institutional controls and inspections were proposed as the remedy and accepted by TDEC in July 2007. Institutional controls and inspections have been in place since then and inspections are ongoing. Restrictions are no soil excavation on figure in the HSAAP Land Use Control Implementation Plan (LUCIP), no excavation without prior TDEC approval and a safety dig permit, and signage. In 2020, Building 148 was demolished. Soil samples were taken post-excavation to determine if the site footprint should be expanded to cover the building area. All samples were non-detect. The WWII Pesticide Equipment Wash Down Area (SWMU 88) is located in the Area B shop area south of Road 1966 and southwest of the Service Station (Building 105). The unit consists of a pit filled with six-inch cobbles. The depth of the pit is approximately 2.5 ft, and the surface dimensions are about 20 ft wide by 35 ft long. Between the 1940s and the early-1970s the unit was used to rinse off pesticide dispersing equipment. Four soil samples were collected from two soil borings conducted at SWMU 88 as part of the FY99 confirmatory sampling at HSAAP. Pesticides and herbicides were detected in all four samples. Petroleum hydrocarbons were

detected in one sample. The results of this sampling as reported in the November 1999 confirmatory sampling work plan indicate that pesticides herbicides and petroleum product have been released to the subsurface soils at the unit and may impact groundwater quality. A 2005 IM removed approximately 310 cy of pesticide and petroleum contaminated soil. An RFI/IM report was submitted to TDEC in April 2006 and approved by TDEC in May 2006. Institutional controls and inspections were proposed as the remedy and accepted by TDEC in July 2007. Institutional controls and inspections have been in place since then. Institutional control inspections are ongoing. Current and future land use is industrial/commercial. There is low potential for off-site migration. LTM including LUCs and periodic reviews will continue for this site indefinitely.

47305.1022_HSAAP-33_FORMER SOLVENT BURN TANK

Env Site ID: HSAAP-33

Cleanup Site: FORMER SOLVENT BURN TANK

Alias: SWMU-50

Regulatory Driver: RCRA-C

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: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	2/28/1991	8/31/1991
CS:	6/30/1993	6/30/1993
RFI/CMS:	9/30/1995	9/30/2006
DES:	- -	- -
IRA:	1/31/1998	2/28/1998
CMI(C):	9/30/2004	9/30/2007
CMI(O):	- -	- -
LTM:	10/15/2007	9/30/2054

Site Narrative: The HSAAP-33 site covers LTM for AOC-GW and SWMUs 18, 19, 29, and 20 under the RCRA Corrective Action program. These SWMUs were given a formalized final remedy on Jan. 24, 2013 when TDEC finalized the CAO Modification Case Number 03-HCA003. AOC-GW unit addresses groundwater contamination issues throughout the installation. The CAO requires that 27 monitoring wells be sampled in the spring and nine monitoring wells be sampled in the fall for a total of 36 monitoring wells. AOC-GW includes all groundwater associated with releases at the other HSAAP Installation Restoration Program sites that have groundwater contamination. Additionally, AOC-GW includes groundwater in all of the industrialized portions of the Area A and Area B production areas of HSAAP that are not associated with specific SWMUs. At least 220 permanent monitoring wells and temporary well points have been sampled at HSAAP as part of confirmatory investigations and AOC-GW RFI efforts conducted since 2000. The most recent (2005 and 2006) phases of investigation evaluated the most likely groundwater flow pathways (along the top of bedrock adjacent to surface ditches and along underground utility routes) by installing additional wells. These phases of investigation also evaluated long-term contaminant trends and evaluated the factors affecting fate and migration of contaminants. The contaminants of interest in Area A are semi-volatile organic compounds (SVOC) from coal tar and releases of volatile organic compounds (VOC) from former industrial operations. Area B is broken into several subsections. The contaminants of interest detected in groundwater above Risk Based Screening Concentrations in the Area B Landfill Area are RCRA metals, SVOCs, and explosives. The contaminants of interest in the Area B explosives production and shop areas are explosive compounds, mercury, pesticides, and herbicides and fuel-related chemicals. Monitoring reporting and well inspections are required under LTM. SWMU 18 is a Closed Sanitary Landfill in Area B west of B-155. The three-acre area is registered with the county and was used from 1967 to 1984; it was closed on Aug. 27, 1984. Approximately 2,160 cy of trash, garbage bagged asbestos, empty pesticide containers, and fluorescent light bulbs were landfilled at this site. Groundwater monitoring results indicate mercury levels above action levels. Results of sampling indicate mercury in monitoring well (MW)-70 above the maximum

contaminant level (MCL). LTM will continue on MW-70 as part of the AOC-GW final remedy. The current approved remedy of signs institutional controls and inspections are ongoing. SWMU 19 is a Construction Debris Landfill unit located in Area B south of the existing Sanitary Landfill (SWMU 17). It was placed upon the former site of the Sedimentation Pond for the Sanitary Landfill (SWMU 29). In 1984 the base of the pond collapsed due to flooding. TDEC allowed the facility to fill the area with uncontaminated construction debris. An RFI was approved by TDEC in December 2006. SWMU 20 is the Rock Quarry Landfill which is located at the west end of Area B adjacent to the Holston River. Originally the site was a two-acre limestone quarry. After quarrying operations ceased the site was used as a demolition landfill in the 1940s during construction of the installation. It was closed in 1983 and is registered in Hawkins County as a closed landfill. This site contains six cy of concrete containing explosives from a production building. Other material disposed of in the landfill includes construction and demolition wastes. An RFI was submitted in October 2005 and approved by TDEC in December 2005. An RFI Addendum was approved by TDEC in August 2006. The current approved remedy of signs institutional controls and inspections are ongoing. LUCs include no disturbance of landfill cap or waste materials, no excavation without prior approval from TDEC and a valid safety dig permit issued by Holston, and signage. Current and future land use is industrial/commercial. There is low potential for off-site migration. LTM will continue indefinitely and include monitoring reporting LUCs and periodic reviews.

47305.1025_HSAAP-37_GAS PRODUCER CONTAMINATION

Env Site ID: HSAAP-37

Cleanup Site: GAS PRODUCER CONTAMINATION

Alias: SWMU-4,CS

Regulatory Driver: RCRA-C

RIP Date: 9/15/2004

RC Date: 9/15/2004

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	1/31/1991	8/31/1991
CS:	7/31/1995	12/31/1997
RFI/CMS:	1/31/2001	12/31/2003
DES:	- -	- -
IRA:	12/15/1996	2/15/1997
CMI(C):	7/15/2004	9/15/2004
CMI(O):	- -	- -
LTM:	9/30/2005	9/30/2054

Site Narrative: The HSAAP-37 site covers the LTM for SWMUs 4, 96, and 103 under the RCRA Corrective Action program. These SWMUs were given a formalized final remedy on Jan. 24, 2013 when TDEC finalized the CAO Modification Case Number 03-HCA003. The coal tar tanks (SWMU 4) consisted of aboveground steel tanks that were located behind Building 8 in Area A. The tanks stored coal tar and coal tar liquor which was generated at Building 10. The tanks were removed from the site in 1996. Coal tar waste spillage from the tanks has contaminated the soil at the site. An RFI was completed in February 2002. The report determined that there is a buried discrete coal tar mass in place, and it is exposed at the surface. In August 2003, the accessible buried coal tar mass and associated concrete retaining basin were removed. In 2009, additional coal tar was discovered adjacent to Building 8. In 2010, 17 cy of coal tar were removed, and eight test pits were dug revealing further coal tar contamination at the site. In 2011, 12 additional test pits were dug to delineate the coal tar. Eight cy of coal tar were removed. Coal tar remains in the SWMU approximately three ft below ground surface (bgs). The tar is at least two ft thick in some places. The tar does not appear to exceed the delineated perimeter of the SWMU. In 2009, TDEC approved the remedy of signs institutional controls and inspections and formalized it during the CAO modification. SWMU 96 was the location of the producer gas building coal tar liquor storage tanks located between Building 10 and the cooling coils in Area A. The unit consisted of aboveground storage tanks (AST) and was closed when the producer gas building ceased operations. The tanks and concrete wall structure were removed in 1996. A soil removal action was completed in 1997. Soil samples collected in 2002 showed concentrations of benzo[a]pyrene and other SVOCs exceeded remediation goals. The groundwater samples showed arsenic and benzene concentrations slightly exceeded the MCLs for drinking water. In June 2002, TDEC issued an IM order. In October 2002, four monitoring wells were installed as an IM to address concerns over potential migration to the nearby Holston River. A delay in the Army's initial response resulted in the issuance of a notice of violation. In spring 2003, a geophysical survey was conducted in the area between the producer gas building and the Holston River that identified bedrock fractures and degraded groundwater. In August 2003, three monitoring wells were

installed in the bedrock fractures. At the same time additional soil data was collected. This soil data confirmed the presence of coal tar/liquor mass in the soil beneath a portion of the exhauster building and the decanter building on the north side of the facility. In 2004, an IM was conducted in which the former exhauster building, and decanter structures were demolished, and 719 cy of contaminated soil was removed. The soil was excavated down to the top of bedrock at 8-10 ft bgs. Soil samples showed that SVOC contamination exceeding industrial based risk assessment levels remains along the north sidewall and at the northeast bottom corner of the excavation. The railroad line (north) and the footers of Building 10 (east) hindered further excavation. In 2009, TDEC approved the remedy of signs institutional controls and inspections and formalized it during the CAO modification. Groundwater at SWMU 96 is addressed under AOC-GW which is part of HSAAP-33. SWMU 103 is a coal tar site that is located on the south side of the Area A steam plant. The unit consisted of a ditch that extended from the rear of Building 8 originating at SWMU 4 to the Holston River. In the 1970s, an AST for filtered water was moved over a portion of the unit. An IM for SWMU 103 was performed in FY05 and six cy of coal tar were removed. In 2007, TDEC approved the remedy of institutional controls and inspections and formalized it during the CAO modification. In 2012, 15 gallons of coal tar was removed from the top of the slope of the bank above the Holston River and a few cubic feet were removed from a trench installed during water line repair operations. LTM is ongoing. LUCs for this site include no disturbance of the cap or the coal tar, no excavation without prior approval from TDEC excavation with valid Holston safety dig permit only, and signs. Current and future land use is industrial/commercial. There is low potential for off-site migration. This site will remain in LTM indefinitely. LTM will consist of monitoring and reporting of LUCs and periodic reviews.

47305.1033_CCHSAAP-41_Catch Basins and Aprons

Env Site ID: CCHSAAP-41

Cleanup Site: Catch Basins and Aprons

Alias: SWMU 3

Regulatory Driver: RCRA-C

RIP Date: 7/15/2015

RC Date: 7/15/2015

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	4/30/1995	9/30/1996
CS:	3/15/2011	5/15/2012
RFI/CMS:	5/15/2012	3/15/2015
DES:	- -	- -
IRA:	- -	- -
CMI(C):	2/15/2014	7/15/2015
CMI(O):	- -	- -
LTM:	7/16/2015	9/30/2054

Site Narrative: CCHSAAP-41 includes SWMU 3 which is the designation for the catch basins aprons channels and settling basins for explosive waste at each explosives manufacturing building. There are 103 buildings with catch basins in Area B that captured and collected waste explosives. The potentially impacted soil near the inactive catch basin units was sampled as part of a confirmation sampling (CS) in 2011 for potential explosives contamination. Ten catch basin units had Royal Demolition Explosives (RDX) soil contamination above Industrial Risk Screening Levels (RSL) and five catch basin units had RDX soil contamination above Residential RSL. NFA was approved by TDEC at the catch basin units where the CS showed no soil contamination above the residential RSL. An RFI to delineate contamination at 14 buildings exceeding residential or industrial RSLs was submitted to TDEC in October 2014 and approved in April 2015. One building location that exceeded RSL was reactivated, and the delineation has been deferred until the building is deactivated in the future. The remaining active catch basins are planned for CS when they are scheduled for demolition or at time of plant closure. The RFI approval stated institutional controls and inspections be performed at this site. On Jan. 24, 2013, TDEC finalized the modification to the CAO. The modification identified the remedy as institutional controls and inspections for the site. In March 2016, a facility action plan meeting was held. During the meeting it was decided that SWMU 3 should be broken down into sub-SWMUs per building (3a, 3b, etc.). This breakdown and movement of each building to the appropriate table is illustrated in the 2020 CAO Modification. The controls and inspections are being implemented. TDEC requires LUCs until the catch basins are taken out of service and investigation/confirmatory sampling can be completed. The buildings that require inspection are listed in Table 17-1 of the LUCIP. LUC restrictions include no excavation, gravel cover at areas where soil above RDX industrial RSL is present at the ground surface, no excavation without prior approval from TDEC excavation with valid Holston safety dig permit only, and signs. Current and future land use is industrial/commercial. There is low potential for off-site migration. LTM including LUCs and periodic reviews will continue for this site indefinitely.

47305.1034_CCHSAAP-42_WORLD WAR II COAL TAR SITE 2

Env Site ID: CCHSAAP-42

Cleanup Site: WORLD WAR II COAL TAR SITE 2

Alias: SWMU 109

Regulatory Driver: RCRA-D

RIP Date: 1/31/2018

RC Date: 1/31/2018

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: Not Evaluated

MRSPP: N/A

Phase	Start	End
RFA:	3/15/2014	7/15/2014
CS:	- -	- -
RFI/CMS:	8/15/2014	12/31/2017
DES:	- -	- -
IRA:	- -	- -
CMI(C):	12/15/2016	1/31/2018
CMI(O):	- -	- -
LTM:	6/15/2018	9/30/2054

Site Narrative: SWMU 109 is located in Area B on the flood plain of the Holston River south of the steam plant and railroad track in the explosives production area west of the former Sodium Nitrate Ponds 3 and 4 and SWMU 26 WWII Coal Tar. The topography of the unit is relatively flat. The surface is vegetated with numerous trees in the northern section. An old man-made cooling channel is located in the center of the coal tar that is on the ground surface. A drainage ditch flows into the channel from the south near the observed coal tar. Also, the cooling channel flows into an active cooling channel approximately 650 ft to the west. The coal tar likely came from the Producer Gas Plant Building 10 in Area A. The Producer Gas Plant was operated from 1943 until January 1993 to convert bituminous coal into low British thermal units' gas that was used as a combustion fuel for the acetic anhydride process furnaces in Building 7 Area A. The by-product of the coal gasification process which is coal tar contains phenols Polycyclic Aromatic Hydrocarbons and may contain other light fraction hydrocarbons. Coal tar was observed at three locations at the site. The area of observed coal tar north of the cooling channel is approximately 12 ft wide by 27 ft long. Coal tar in the channel measures approximately 12 ft wide by 55 ft long. An area of coal tar measuring 2 ft wide by 10 ft long is located south of the channel. The three locations of coal tar on the surface are located within an area approximately 150 ft by 90 ft; however, the area of buried coal tar may be larger. In addition to the observed coal tar there are numerous linear subsidence features in the field southwest of the observed coal tar. The subsidence areas are approximately 20 ft wide by 450 ft long. In 2014 six hand auger borings were completed at the site. There was no coal tar or other buried material encountered in the boring completed in the subsidence areas. TDEC required that an RFI be conducted in accordance with the CAO. An RFI report was approved by TDEC in December 2016. Based on these results TDEC has stated that institutional controls and signs will be required for this site. During the CMI(C) the site was added to the LUCIP, and signs were installed. Inspections began in the fall of 2017. Current and future land use is industrial/commercial. There is low potential for off-site migration. LTM including LUCs and periodic reviews for this site will continue indefinitely.

47305.1035_HSAAP-43_PFAS

Env Site ID: HSAAP-43
Cleanup Site: PFAS
Alias: #
Regulatory Driver: CERCLA
RIP Date: 9/30/2028
RC Date: 9/30/2028
RC Reason: Not assigned
SC Date: 9/30/2028
Program: ENV Restoration, Army
Subprogram: IR
NPL Status: No
Hazardous Ranking Score: 0
RRSE:
MRSPP: N/A

Phase	Start	End
PA:	5/21/2018	5/13/2019
SI:	5/14/2019	9/30/2023
RI/FS:	9/30/2023	9/30/2028
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	- -	- -

Site Narrative: Per direction from Deputy Chief of Staff (DCS) G9 this site was created to account for all per- and polyfluoroalkyl substances (PFAS) costs at the installation. A Preliminary Assessment (PA) / Site Inspection (SI) was completed in 2023. Based on the results of the PA/SI, PFAS results are above the July 2022 DOD PFAS screening values for residential soil and/or groundwater at four of the six areas identified at HSAAP. Therefore, a remedial investigation was executed in FY24. It is anticipated that sites will become NFA after the RI phase due to the generally low level detections found during the SI. Current and future land use is industrial/commercial. There is low potential for off-site migration.

SITE SUMMARY

SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
47305.1003	HSAAP-04_ACTIVE SANITARY LANDFILL	8/31/1991
47305.1004	HSAAP-08_SURFACE IMPOUNDMENTS REQUIRING	8/27/2020
47305.1005	HSAAP-11_NITRIC ACID SPILL POND	2/28/1991
47305.1006	HSAAP-12_TAR BURIAL PIT AREA B	8/31/1991
47305.1009	HSAAP-16_BUILDING 8 EXPLOSIVES TESTING A	8/31/1991
47305.1010	HSAAP-17_PONDS (SODIUM NITRATE) 3 & 4	6/30/1996
47305.1011	HSAAP-19_STP E OF MFG AREA	8/31/1991
47305.1012	HSAAP-20_FLY ASH LANDFILL, AREA B, CLOSE	8/31/1991
47305.1013	HSAAP-21_AERATION POND AREA A	3/31/1998
47305.1014	HSAAP-22_LANDFILL AREA A - COAL TAR	3/31/1998
47305.1015	HSAAP-23_PRODUCTION AREA B DRAINAGE DITC	9/30/2005
47305.1016	HSAAP-25_PESTICIDE DRAIN FIELD NEAR BLDG	12/31/1998
47305.1018	HSAAP-27_SANITARY LANDFILL WEST OF B-155	4/30/2006
47305.1019	HSAAP-28_LEAKING UST B-22	1/31/1993
47305.1020	HSAAP-29_LEAKING UST B-105	9/30/2007
47305.1021	HSAAP-30_FIRING RANGES	9/30/2006
47305.1023	HSAAP-34_HEATING OIL LEAKING UST AT B-12	4/30/1996
47305.1024	HSAAP-36_ACTIVE COAL PILE SOUTH OF B-200	8/31/1991
47305.1026	HSAAP-38_MISC.STORAGE AREAS REQUIRING CO	9/30/2006
47305.1027	HSAAP-39_PAST SPILL SITES /LOADING SITES	8/31/1991
47305.1028	HSAAP-40_SANDBLASTING/LOADING AREAS	12/31/2000
47305.1031	PBC at Holston_PBC	9/30/2007
47305.1032	HSAAAP-AOCO_Area of Concern O - Coal Tar	9/30/2007
47305.1029	HSAAP-002-R-01_EXPLOSIVES TESTING AREA	10/31/2003
47305.1030	HSAAP-001-R-01_BURNING GROUND	10/31/2003

COMMUNITY INVOLVEMENT

Community Involvement Plan (Date Last Reviewed):	7/15/2016
Technical Review Committee Establishment Date:	N/A
Restoration Advisory Board (RAB) Establishment Date:	9/30/1999
RAB Adjournment Date:	5/15/2005
RAB Adjournment Reason:	There is no longer sufficient, sustained community interest
Reasons for Not Establishing RAB:	N/A
RAB Date of Solicitation from Community:	6/16/2017
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:	4509 West Stone Drive, B159, Kingsport, TN 37660,
Information Repository Location:	Kingsport City Library, 400 Broad Street, Kingsport, TN 37660

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	PR	5/11/2020	12/31/2021	HSAAP will implement the LTM inspection findings, as recommended in the PR.	The PR reviewed all SWMUs in LTM at HSAAP. All sites were found to be protective of human health. Recommendations included implementing deficiencies that were noted in the last site inspection as documented in the annual LTM report.	All sites were found to be protective of human health. HSAAP will implement the LTM inspection findings, as recommended in the PR.
Planned	PR	5/11/2025	12/31/2026	N/A	N/A	N/A