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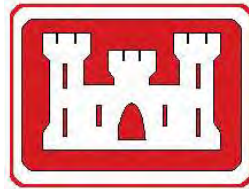
**Action Memorandum
for CC RVAAP-70 East Classification Yard
Ravenna Army Ammunition Plant Restoration Program
Portage and Trumbull Counties, Ohio**

Revision 1.0

June 17, 2021

**Contract No.: W912QR-12-D-0002
Delivery Order: 0003**

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**Action Memorandum
CC RVAAP-70 East Classification Yard
Ravenna Army Ammunition Plant Restoration Program
Portage and Trumbull Counties, Ohio**

This Action Memorandum presents the selected alternative (Alternative 2 - *Excavation with Offsite Disposal*) as recommended in the Engineering Evaluation/Cost Analysis (EE/CA) (Parsons, 2021) for the CC RVAAP-70 East Classification Yard area of concern (AOC) at the Camp James A. Garfield Joint Military Training Center (CJAG) (formerly the Ravenna Army Ammunition Plant [RVAAP]) in Portage and Trumbull counties, Ohio. The U.S. Army is the lead agency under the Defense Environmental Restoration Program for the former RVAAP, and developed this Action Memorandum consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended, and consistent with the National Oil and Hazardous Substances Contingency Plan (NCP). This decision document will be incorporated into the larger Administrative Record file for the former RVAAP, which is available for public review at the CJAG Environmental Office at 1438 State Route 534 SW, Newton Falls, Ohio 44444.

This document, presenting a selected Alternative 2 Excavation and Off-site Disposal with a present worth cost estimate of \$130,291 (in base year 2020 dollars) is approved by the undersigned.

Approved

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02 July 2021

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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	area of concern
ARAR	Applicable or Relevant and Appropriate Requirements
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Chemical Evaluation of Soil
CJAG	Camp James A. Garfield Joint Military Training Center
DUs	decision units
ECC	Environmental Chemical Corporation
EE/CA	Engineering Evaluation/Cost Analysis
FS	Feasibility Study
FWCUGs	Facility-Wide Cleanup Goals
HQ	hazard quotient
HRR	Historical Records Review
ISM	incremental sampling methodology
MDC	maximum detected concentration
NCP	National Oil and Hazardous Substances Contingency Plan
NTCRA	non-time-critical removal action
OHARNG	Ohio Army National Guard
Ohio EPA	Ohio Environmental Protection Agency
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RSLs	Regional Screening Levels
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
SI	Site Inspection
SRCs	site-related chemicals
SVOCs	semivolatile organic compounds
TBC	to be considered
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds

1. INTRODUCTION

1.1 PURPOSE

This Action Memorandum was prepared by Parsons under Contract No. W912QR-12-D-0002, Delivery Order No. 0003. This Action Memorandum documents approval for the selection of Alternative 2 – Excavation and Offsite disposal as recommended in the Engineering Evaluation/Cost Analysis (EE/CA, Parsons, 2021). The EE/CA identified and assessed Alternatives to support the selection of appropriate remedial actions for the CC RVAAP-70 East Classification Yard area of concern (AOC) at Camp James A. Garfield Joint Military Training Center (CJAG) (formerly the Ravenna Army Ammunition Plant [RVAAP]) in Portage and Trumbull counties, Ohio. This is a non-time-critical removal action (NTCRA). As demonstrated in the EE/CA, the removal action will effectively address removal of the polycyclic aromatic hydrocarbon (PAH)-contaminated surface soil in the area around Building 47-40. Only surface soil containing PAHs were identified as requiring removal.

The U.S. Army is the lead agency under the Defense Environmental Restoration Program for the former RVAAP, and developed this Action Memorandum consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended, and consistent with the National Oil and Hazardous Substances Contingency Plan (NCP). This decision document will be incorporated into the larger Administrative Record file for the former RVAAP, which is available for public view at CJAG, 1438 State Route 534 SW, Newton Falls, Ohio 44444.

In addition, an Information Repository of current information and final documents is available to any interested reader at the following libraries:

Reed Memorial Library

167 East Main Street
Ravenna, Ohio 44266

Newton Falls Public Library

204 South Canal Street
Newton Falls, Ohio 44444-1694

The RVAAP Restoration Program has an online resource for restoration news and information. This website can be viewed at www.rvaap.org.

1.2 GENERAL FACILITY DESCRIPTION

The former RVAAP, now known as CJAG, is located in northeastern Ohio within Portage and Trumbull counties. CJAG is approximately three (3) miles east/northeast of the City of Ravenna and one (1) mile north/northwest of the City of Newton Falls (Figure 1-1). CJAG is federally owned and is approximately 11 miles long and 3.5 miles wide. CJAG is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad to the south; Garret, McCormick, and Berry Roads to the west; the Norfolk Southern Railroad to the north; and State Route 534 to the east. In addition, CJAG is surrounded by the communities of Windham, Garrettsville, Charlestown, and Wayland.

As of September 2013, administrative accountability for the entire 21,683-acre facility has been transferred to the United States Property and Fiscal Officer for Ohio and the property subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a military training site, CJAG. The RVAAP restoration program involves cleanup of former production/operational areas

throughout CJAG related to former activities conducted under the RVAAP. The Ohio Environmental Protection Agency (Ohio EPA) is the regulatory agency for the investigation and remediation conducted by the U.S. Army under the U.S. Department of Defense Installation Restoration Program.

1.3 FORMER RVAAP OPERATION HISTORY AND MISSION

Constructed in 1940, production at the former RVAAP began in December 1941, with the primary missions of depot storage and ammunition loading. The Installation was divided into two separate units: the Portage Ordnance Depot and the Ravenna Ordnance Plant. The depot's primary mission was storage of munitions and components, while the mission of the ordnance plant was loading and packing major caliber artillery ammunition and the assembly of munitions-initiating components that included fuzes, boosters, and percussion elements. In August 1943, the Installation was re-designated as the Ravenna Ordnance Center, and in November 1945, it was redesignated as the Ravenna Arsenal.

Industrial operations at the former RVAAP consisted of 12 munitions-assembly facilities referred to as "load lines." Operations on the load lines produced explosive dust, spills, and vapors that collected on the floors and walls of each building. Other load lines were used to manufacture fuzes, primers, and boosters. From 1946 to 1949, one facility (Load Line 12) was used to produce ammonium nitrate for explosives and fertilizers. Demilitarization activities were also conducted at RVAAP that included disassembly and extraction of explosive compounds from varied-sized military projectiles. Periodic demilitarization of various munitions continued through 1992.

Other areas at RVAAP were used for the burning, demolition, and testing of munitions. These burning and demolition grounds consisted of large parcels of open space or abandoned quarries. Principal contaminants include explosives, propellants, metals, and semivolatile organics.

The plant was placed in standby status in 1950 and reactivated during the Korean Conflict to load and pack major caliber shells and components. All production ended in August 1957, and in October 1957 the Installation again was placed in a standby condition. In October 1960 the ammonium nitrate line was renovated for demilitarization operations, which involved melting explosives out of bomb casings for subsequent recycling. These operations began in January 1961. In July 1961, the plant was deactivated again. In November 1961, the entire Installation designated as the former RVAAP.

In May 1968, loading, assembling, and packing munitions began on three load lines and two component lines to support the Southeast Asia conflict. These facilities were deactivated in August 1972. The destruction of M71A1 90-millimeter projectiles extended from June 1973 until March 1974. Demilitarization of various munitions was conducted from October 1982 through 1992.

Until 1993, the former RVAAP maintained the capability to load, assemble, and pack military ammunition. As part of the former RVAAP mission, the U.S. Army maintained inactive facilities in a standby status by keeping equipment in a condition to allow resuming production within prescribed limitations. In September 1993, the U.S. Army placed the former RVAAP in inactive caretaker status, which subsequently changed to modified caretaker status. The load lines and associated real estate were determined to be excess by the U.S. Army.



Figure 1-1: General Location and Orientation of Former Ravenna Army Ammunition Plant

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2. SITE DESCRIPTION AND HISTORY

2.1 EAST CLASSIFICATION YARD DESCRIPTION

The AOC is located at the former RVAAP in Portage County, Ohio. The location of CC RVAAP-70 East Classification Yard is shown on Figure 2-1. The current layout of the CC RVAAP-70 East Classification Yard AOC is shown on Figure 2-2. The former RVAAP was originally equipped with east and west classification yards during the facility's early operational years. CC RVAAP-70 East Classification Yard is located east of Load Line 1 and the Defense Logistics Agency former Main Ore Storage Area, and in close proximity to the intersection of Ramsdell Road and Irons Road. No documentation was found during the Historical Records Review (HRR) (Science Applications International Corporation [SAIC], 2011) to define the specific years of operation of the AOC. The CC RVAAP-70 East Classification Yard AOC consists of Building 47-40 (the Round House still exists, but is not actively used), the former herbicide storage shed (former Building 47-60), the containment area for a former aboveground storage tank (documented spill of No. 5 fuel oil occurred within the containment area in 1986), and an outdoor open wash rack south of Building 47-40 (north of Butts-Kistler Road). A railroad track complex is located east of the AOC and is currently used by the OHARNG. Most of the other rail lines in the area have been removed. Two former 15,000-gallon diesel fuel underground storage tanks, RV-11 and RV-22, were located west of the wash rack, but were removed in February 1990 and received No Further Action determinations in April 1992 (SAIC, 2011).

The CC RVAAP-70 East Classification Yard was used for switching and maintaining railroad cars. Building 47-40 (Round House) was used for locomotive engine repairs and other maintenance activities (SAIC, 2011). The former herbicide storage shed was used to store a track-mounted herbicide sprayer and the herbicides used to control vegetation along the railroads at the former RVAAP. Interviewees for the HRR noted that an outdoor open wash rack was located to the south of Building 47-40 which was used to wash box cars. The wash rack was also reportedly used to wash train engines.

2.2 PREVIOUS INVESTIGATIONS

2.2.1 Historical Records Review

The following paragraphs summarize details for CC RVAAP-70 East Classification Yard presented in the *Final Historical Records Review Report for the 2010 Phase I Remedial Investigation Services at Compliance Restoration Sites (9 Areas of Concern), Ravenna Army Ammunition Plant, Ravenna, Ohio* (SAIC, 2011). Representative historical aerial photographs from 1952 and 2006 are included in Appendix R of the HRR.

A spill report dated 11 August 1986 documents a leak of No. 5 fuel oil from an aboveground storage tank (Tank 65B) from the CC RVAAP-70 East Classification Yard. The spill report indicates that a broken valve caused the leak. The entire contents of the tank emptied into the bermed containment area. The report indicates the containment area was scarified and the contaminated soil was piled within the containment area. However, no quantities of contaminated soil were noted. The report indicates that approximately 16,632 gallons of fuel oil was salvaged from the containment area and approximately 120 gallons of oil mixed with dirt and straw were to be disposed per Ohio EPA instructions. The report indicates that straw was placed on oil in areas where the equipment could not reach, such as beneath the support structures and by piping. Samples of the contaminated soil were collected to determine if the contaminated soil could be incinerated in accordance with the regulations at that time, and the soil met the criteria for incineration. No final report regarding the cleanup was found during the HRR evaluation. The tanks had since been removed from the AOC and the area was overgrown with vegetation during the HRR site walks. The HRR recommended that surface and subsurface soil within, and in the vicinity of, the former tank containment area and surface soil and dry sediment within any nearby surface water

conveyances be analyzed for semivolatile organic compounds (SVOCs) and volatile organic compounds (VOCs).

Building 47-40 (Round House) was used as a locomotive maintenance and repair building. Building 47-40 still exists but is no longer used for any purpose. Building 47-40 is a red brick building approximately 55 feet by 143.5 feet by 36 feet. The interior of the building contains a floor pit that was used by personnel to access the undersides of the engines for repair. No documented evidence related to spills or releases were found for the Round House building. Building 47-40 also contained at least two polychlorinated biphenyl (PCB) transformers. Service to the transformers is unknown. Interviewees indicated the transformer oil was tested for PCBs; however, no records of testing were discovered during the HRR evaluation. Staining from past operations was visible on the concrete floor within the building. No other visible evidence of impacts was noted during the property visit/perimeter survey. The HRR recommended that surface soil and dry sediment samples around doors and service bay entrances and in drainage ditches leading from the building to the storm sewer inlets located around the building be analyzed for target analyte list metals, SVOCs, and PCBs. (Note, the HRR term “dry sediment” referred to soil that is only intermittently covered with surface water. “Dry sediment” is surface soil.)

A storage shed used to store herbicides and a track mounted sprayer was located in the CC RVAAP-70 East Classification Yard. Herbicide mixing operations may also have occurred at the building. The interviewees noted the herbicides may have been mixed with waste oil and applied for vegetation control. The HRR did not identify any documents relating to spills or releases from herbicide storage and mixing. No documentation was found, but some herbicide applications used petroleum products (e.g., oil, kerosene, diesel fuel) as carrier agents. No documentation was found pertaining to the amount of herbicides stored in the herbicide storage shed; however, one interviewee noted the amount stored was approximately 20 gallons. No visible signs that a spill or release had occurred (e.g., stained soil, stressed vegetation) were observed in the area of the former herbicide storage shed. The HRR recommended that surface soil near the former shed and in any runoff conveyances be analyzed for herbicides and SVOCs.

Two interviewees noted the presence of an outdoor wash rack, assumed to be used to wash down the box cars and/or the train engines, on site. The wash rack was outdoors and open with no means of collecting wastewater. No documents related to the wash rack were discovered during the HRR. The wash rack was reportedly supplied with water from nearby Well House #15. One interviewee noted there were no controls in place to collect the wash water. Field personnel noted the potential location of the wash rack just south of Building 47-40 and north of Butts-Kistler Road. Concrete aboveground storage tank supports were discovered at the location along with old, abandoned pipes and valves, assumed to be water pipes from the well house. No visual evidence of impacts (e.g., stained soil, stressed vegetation) from the tank or wash rack activities was observed. The HRR recommended that surface soil and dry sediment in the vicinity of the former wash rack and any runoff conveyances be analyzed for explosives, SVOCs, and PCBs.

2.2.2 Site Investigation

Site Inspection (SI) sampling and analyses plans were designed based on specific recommendations for each of the potential release areas within the AOC as outlined in the HRR (SAIC, 2011). Initial SI field work was detailed in a work plan (Environmental Chemical Corporation [ECC], 2012) and sampling was conducted in November and December 2012 and April 2013. A follow-on work plan was developed for additional sampling (Parsons, 2017), which was conducted at CC RVAAP-70 East Classification Yard in January and February 2018.

An SI Report (Parsons, 2018) was completed to document the results of the field activities performed for CC RVAAP-70 East Classification Yard. As part of the SI, surface soil (0-1 foot below ground

surface [bgs]) and subsurface soil (greater than 1 foot bgs) were sampled to determine the presence of site-related chemicals (SRCs) and identify potential contaminants within the AOC. There are no perennial surface water streams, wetlands, or sediment in the immediate vicinity of CC RVAAP-70 East Classification Yard. The exposure pathway for surface water is incomplete because surface water is only intermittently present at the AOC. Ditches are located on the east and west sides of Building 47-40 and receive intermittent storm water runoff. Surface water and sediment were not present at this AOC during the SI field work in 2012 and 2018, but surface water was observed in drainage ditches in April 2015 following a rain event. Groundwater is being evaluated on a facility-wide basis (RVAAP-66 Facility-Wide Groundwater). Therefore, samples were not collected from surface water, sediment (i.e., from a perennial surface water body), or groundwater during the SI.

The AOC was divided into decision units (DUs) based on potential release areas for investigation:

- Former Fuel Oil Spill Area – DU01
- Drainage Ditch West of Building 47-40 – DU02
- Building 47-40 (Round House)
 - Building 47-40 Round House – Exterior – DU03
 - Building 47-40 Round House – Interior – DU04
- Former Herbicide Storage Shed – DU05
- Outdoor Wash Rack Area – DU06
- Drainage Ditch East of Building 47-40 – DU07

Data generated during the CC RVAAP-70 East Classification Yard SI were screened to identify SRCs and included incremental sampling methodology (ISM) surface soil, discrete surface soil, and subsurface soil samples.

Sample analytical results were assessed to evaluate the presence or absence of contamination. Essential minerals and metals present within background levels were eliminated as potential contaminants. The maximum detected concentration (MDC) of each SRC identified by the SI at each DU was compared to its most stringent Facility-Wide Cleanup Goals (FWCUGs) established for the Resident Receptor (SAIC, 2010) at the former RVAAP in surface or subsurface soils. Concentrations were compared to U.S. Environmental Protection Agency (USEPA) Residential Receptor Regional Screening Levels (RSLs) (USEPA, 2018) at cancer risk of 1×10^{-6} or a hazard quotient (HQ) of 0.1 for those analytes without established FWCUGs, and for PAHs because USEPA updated the toxicity of these compounds after FWCUGs were developed. The potential for contamination to migrate and contact receptors was also evaluated.

The SI recommended further evaluation in a Remedial Investigation (RI) for CC RVAAP-70 East Classification Yard due to potential contaminants in surface soil and subsurface soil:

DU01 Former Fuel Oil Spill Area

- Surface soil: benzo(a)pyrene
- Subsurface soil: benzo(a)pyrene and benzo(a)anthracene

DU02 Drainage Ditch West of Building 47-40

- Surface soil: benzo(a)pyrene

DU03 Building 47-40 Round House - Exterior

- Surface soil: benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene

DU05 Former Herbicide Storage Shed

- Surface soil: benzo(a)pyrene

DU06 Outdoor Wash Rack Area

- Surface soil: benzo(a)pyrene

DU07 Drainage Ditch East of Building 47-40

- Surface soil: arsenic, aroclor-1242, and benzo(a)pyrene.

No further investigation was recommended for subsurface soil at DU03 Building 47-40 Round House - Exterior, DU04 Building 47-40 Round House – Interior, DU05 Former Herbicide Storage Shed, and DU06 Outdoor Wash Rack Area as no potential contaminants were identified.

2.2.3 Post Site Investigation Evaluation

After the SI Report was finalized, the Army prepared a Draft RI Work Plan (Parsons, 2019). The draft work plan proposed additional soil sampling for contaminant delineation and risk assessment.

Ohio EPA reviewed the draft work plan (Ohio EPA, 2019) and noted that the screening values used in the SI and the draft RI work plan were one-tenth of the acceptable unrestricted (residential) cleanup goal, and that contaminant concentrations for many of the DUs within the AOC were sufficiently low as to not require remedial action. Ohio EPA further noted that the standard remedial approach of the USEPA and NCP is to accomplish an RI/Feasibility Study (FS) only if remedial action is warranted. Ohio EPA questioned whether the SI recommendation of an RI/FS was justified or if the AOC could be resolved using another mechanism such as a limited removal action.

Ohio EPA (Ohio EPA, 2019) also included an assessment of each potential contaminant at each DU as identified in the SI:

DU01 Former Fuel Oil Spill Area

- Surface soil: benzo(a)pyrene concentration is below the standard for unrestricted land use.
- Subsurface soil: benzo(a)pyrene and benzo(a)anthracene concentrations exceeded screening values in only two of ten subsurface samples. Only one value marginally exceeds the unrestricted residential standard. Subsurface soils will likely meet unrestricted residential standards.

DU02 Drainage Ditch West of Building 47-40

- Surface soil: benzo(a)pyrene concentration is below the standard for unrestricted land use.

DU03 Building 47-40 Round House - Exterior

- Surface soil: - This is the only DU that has notable contamination (benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene). The DU as currently defined could be remediated by excavating the surface soil and replacing it with clean fill.

DU05 Former Herbicide Storage Shed

- Surface soil: benzo(a)pyrene concentration is below the standard for unrestricted land use.

DU06 Outdoor Wash Rack Area

- Surface soil: benzo(a)pyrene concentration is below the standard for unrestricted land use.

DU07 Drainage Ditch East of Building 47-40

- Surface soil: arsenic concentrations are typical of background and therefore do not constitute a release. Aroclor-1242 and benzo(a)pyrene concentrations are below the standards for unrestricted land use.

Upon review of the Ohio EPA (2019) evaluation, the Army National Guard (ARNG) decided to move forward into a NTCRA for the CC RVAAP-70 East Classification Yard, and to pursue a removal action for surface soil contaminants at DU03. The Army determined that it would be more efficient and cost-effective to proceed with the CERCLA process with an EE/CA to address CC RVAAP-70 contamination.

2.2.4 Engineering Evaluation/Cost Analysis

The EE/CA included a Chemical Evaluation of Soil (CES) to further evaluate the potential contamination in soil. The MDC of each potential contaminant identified by the SI at each DU was compared to the Background Screening Value or USEPA Residential Receptor RSLs (USEPA, 2020) at cancer risk of 1×10^{-5} or a HQ of 1.0. The CES demonstrated that the maximum concentrations of benzo(a)pyrene detected in the surface soil of DU03 require removal (Figure 2-3).

The EE/CA (Parsons, 2021) evaluated two Removal Action Alternatives:

- Alternative 1 – no action
- Alternative 2 – excavation with off-site disposal for surface soil with benzo(a)pyrene to attain Unrestricted (Residential) Land Use

The recommended Alternative for CC RVAAP-70 East Classification Yard is Alternative 2: Excavation with Off-site Disposal. Surface soil contaminated with benzo(a)pyrene will be removed from the AOC, hauled to a licensed and permitted disposal facility, and appropriately disposed. The removal areas will be restored with clean fill material.

Alternative 2 involves the excavation and off-site disposal of surface soil at DU03 (for benzo(a)pyrene in surface soil surrounding Building 47-40) for the surface soil from 0 to 1 foot bgs. This alternative will attain Unrestricted (Residential) Land Use for the AOC. No long-term monitoring or five-year reviews would be required under CERCLA. Any solid waste identified during excavation will be removed and properly disposed. Approximately 370 yds³ of contaminated soil will be removed from the AOC for off-site disposal. The EE/CA estimated a cost of \$130,291 for the completion of this removal action. Figure 2-4 provides the location of the area that requires removal. Appendix B of the EE/CA included a breakdown of the costs and other information used to make this estimate.

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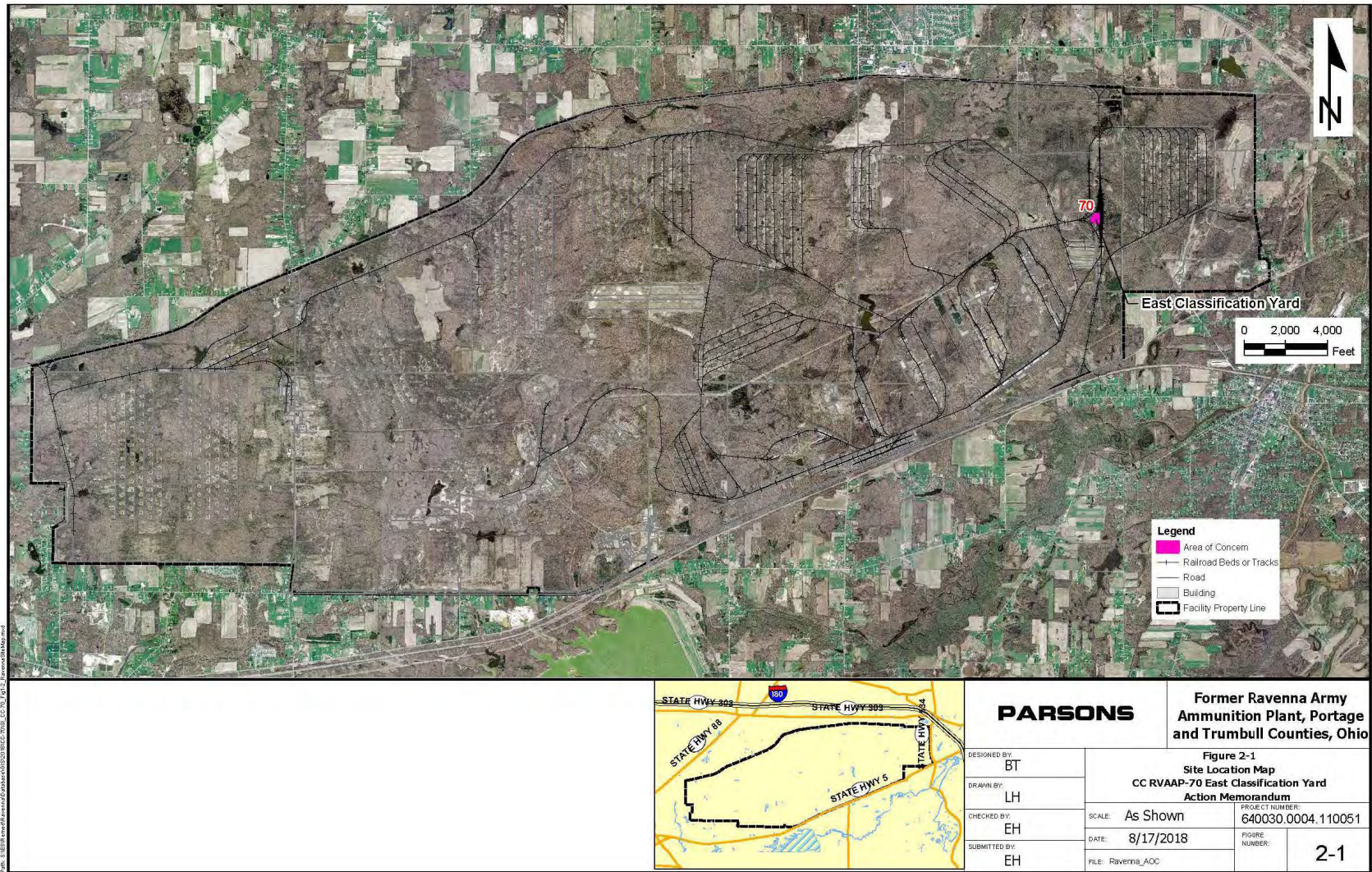


Figure 2-1: Site Location Map

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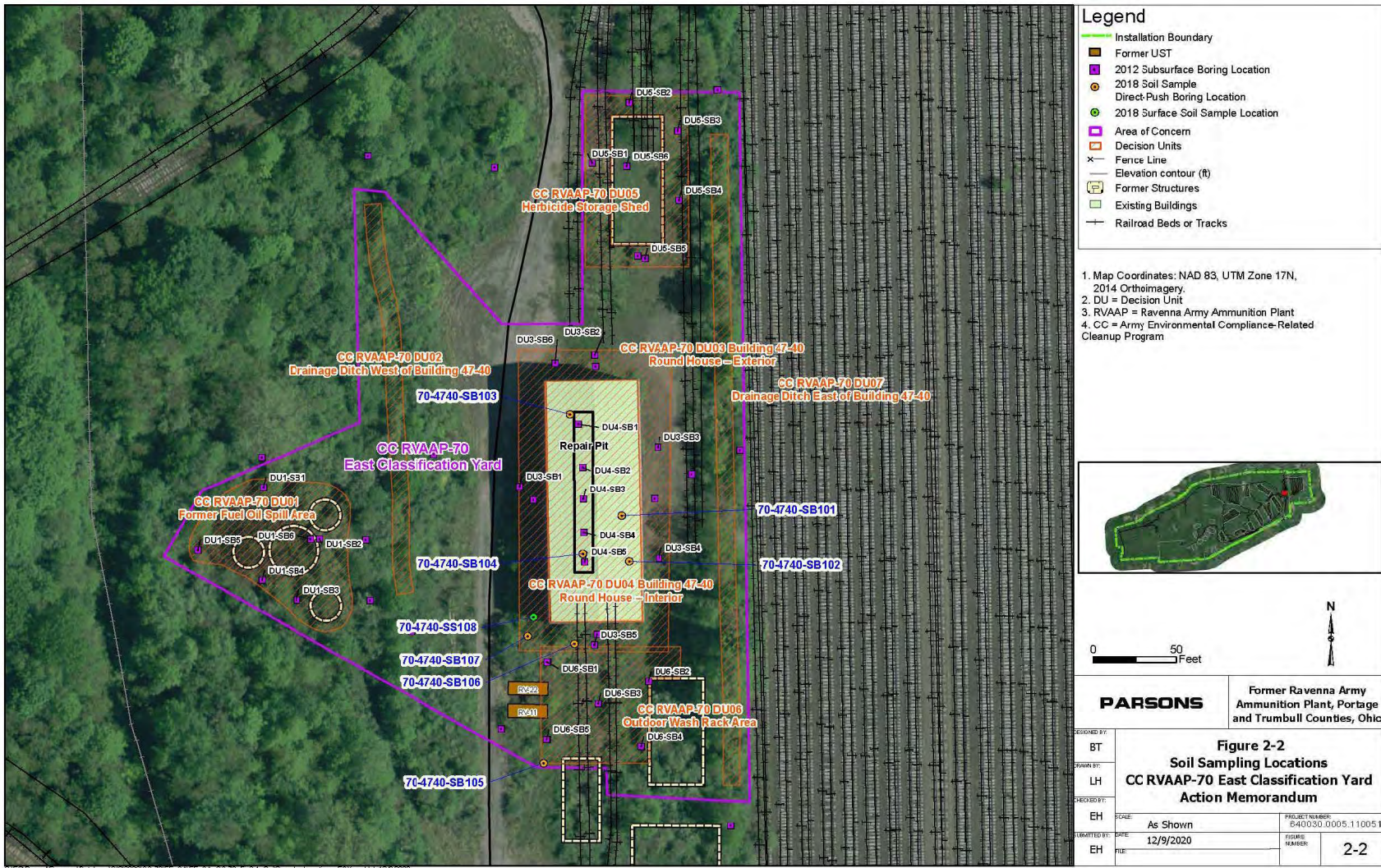


Figure 2-2: Soil Sampling Locations

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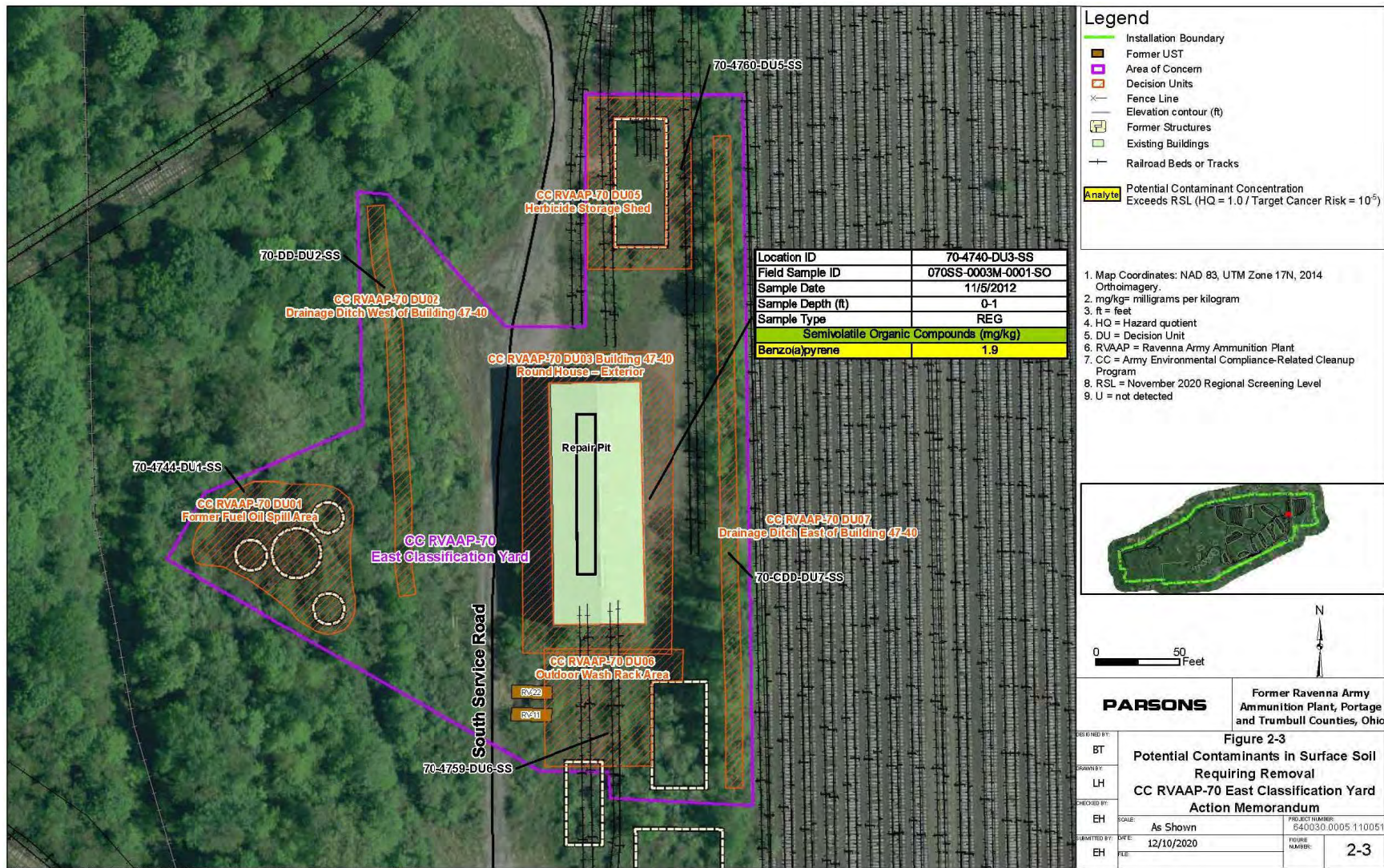


Figure 2-3: Potential Contaminants in Surface Soil Requiring Removal

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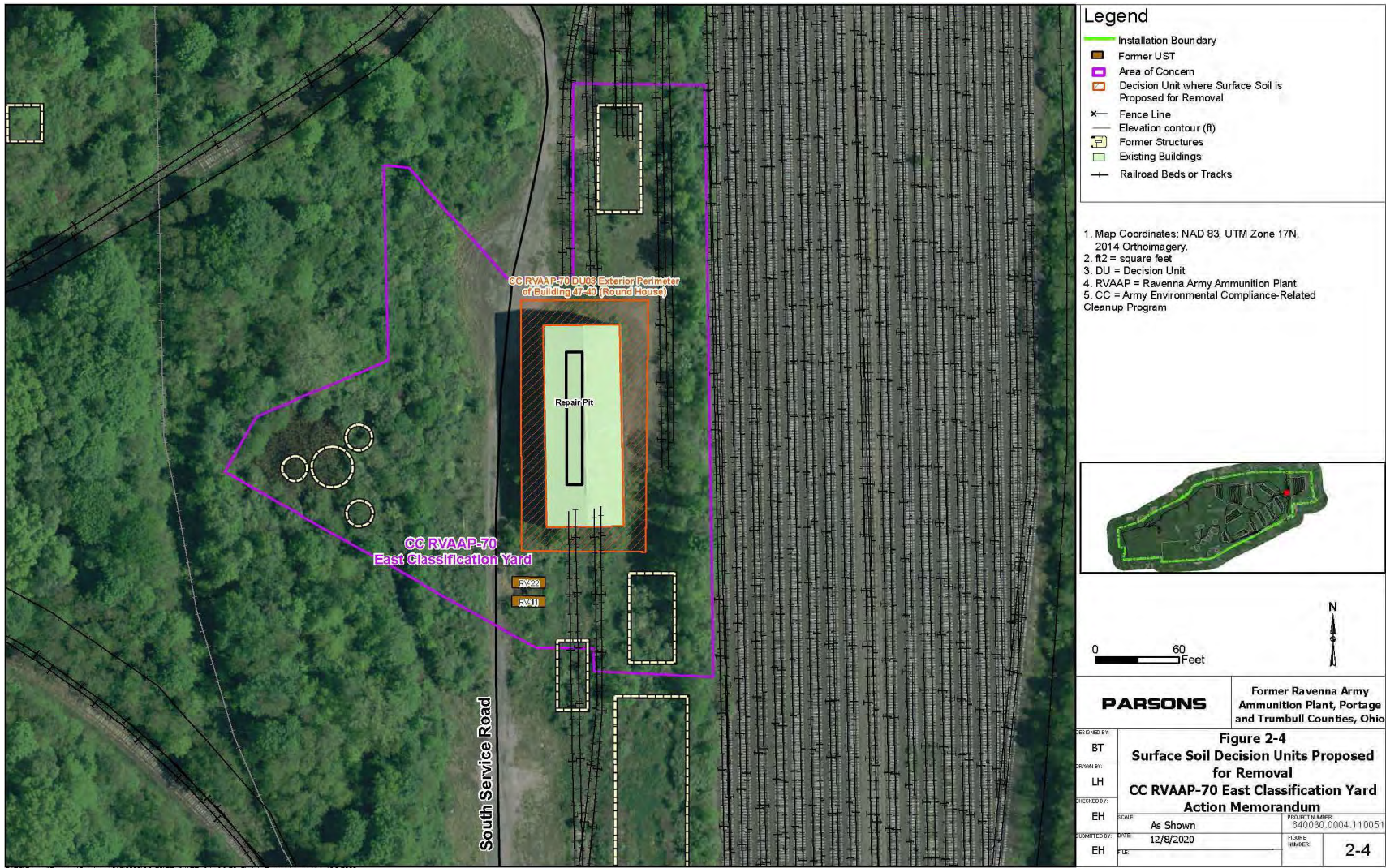


Figure 2-4: Surface Soil Decision Units Proposed for Removal

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3. STATEMENT OF BASIS AND JUSTIFICATION

The U.S. Army determined that the best Alternative was one without land use restrictions or controls to accommodate future military use. Therefore, the Unrestricted (Residential) Land Use was selected because this would not require any additional monitoring, restrictions, or Five Year Reviews.

The SI recommended further evaluation in an RI for CC RVAAP-70 East Classification Yard due to potential contaminants in surface soil and subsurface soil.

After the SI Report was finalized, the Army prepared a Draft RI Work Plan (Parsons, 2019). The draft work plan proposed additional soil sampling for contaminant delineation and risk assessment. Ohio EPA reviewed the draft work plan (Ohio EPA, 2019) and noted that the screening values used in the SI and the draft RI work plan were one-tenth of the acceptable unrestricted (residential) cleanup goal, and that contaminant concentrations for many of the DUs within the AOC were sufficiently low as to not require remedial action. Ohio EPA further noted that the standard remedial approach of the USEPA and NCP is to accomplish an RI/FS only if remedial action is warranted. Ohio EPA questioned whether the SI recommendation of an RI/FS was justified or if the AOC could be resolved using another mechanism such as a limited removal action.

Upon review of the Ohio EPA (2019) evaluation, the ARNG decided to move forward into a NTCRA for the CC RVAAP-70 East Classification Yard, and to pursue a removal action for surface soil contaminants at DU03. The Army determined that it would be more efficient and cost-effective to proceed with the CERCLA process with an EE/CA to address CC RVAAP-70 contamination.

Because potential contamination in soil was identified in the SI, the EE/CA included a CES to further evaluate the potential contamination in soil. The CES demonstrated that the maximum concentrations of chemicals detected in the surface soil of DU03 require removal. The removal of PAHs in surface soil at DU03 would eliminate the potential risks to future users of the site and would achieve unrestricted (Residential) Land Use. Surface soil removal is not required at DU01, DU02, DU05, DU06, or DU07 to achieve Unrestricted Residential Land Use. The maximum concentrations of chemicals detected in the subsurface soil were not great enough to be of concern and did not require removal. Therefore, no further action is necessary for subsurface soil to achieve Unrestricted Residential Land Use. No potential contaminants were identified at the AOC for sediment or surface water. Therefore sediment, surface water, subsurface soil, and surface soil (with the exception of surface soil at DU03) at this AOC require No Further Action.

4. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUORY AND REGULATORY AUTHORITIES

4.1 INTRODUCTION

As required by Section 300.415(b)(2)(i) of the NCP, actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants in soil at the CC RVAAP-70 East Classification Yard are discussed below.

The risk that currently exists in the surface soil in DU03 at the East Classification Yard is from benzo(a)pyrene. The benzo(a)pyrene-contaminated surface soil pose potential risks to any current or future users (receptors) of the AOC. Removal of the benzo(a)pyrene in surface soil at DU03 will remove all risks to the current and future users, including Residential Receptors for Unrestricted (Residential) Land Use. Receptors may come into direct contact with benzo(a)pyrene in surface soil via oral or dermal exposure. Airborne contamination (e.g., windblown dust) and soil vapor are not considered viable migration or exposure pathways at this AOC. None of the potential contaminants identified for this AOC are volatile. The exposure pathway for surface water is incomplete because surface water is only intermittently present at the AOC. The groundwater exposure pathway is incomplete because benzo(a)pyrene is not expected to impact groundwater, and because no groundwater production wells are completed at or near the CC RVAAP-70 East Classification Yard.

4.2 HEALTH RISKS

Benzo(a)pyrene is a PAH and human carcinogen. Exposure to benzo(a)pyrene is associated with developmental, reproductive, and immunological effects. Benzo(a)pyrene is carcinogenic at multiple tumor sites (alimentary tract, liver, kidney, respiratory tract, pharynx, and skin) by all routes of exposure (USEPA, 2017).

5. ENDANGERMENT DETERMINATION

Based on the results of the EE/CA, surface soil at DU03 requires a removal action to address actual or threatened releases of benzo(a)pyrene from this AOC that present an imminent and substantial endangerment to public health, or welfare, or the environment. The EE/CA showed that to eliminate benzo(a)pyrene in soil to prevent any risk or endangerment to public health, or welfare, or the environment, surface soil in DU03 where contamination was found needs to be removed. This location was identified in the CES (Section 3 of the EE/CA) and if removed, the East Classification Yard AOC will achieve Unrestricted/Residential Land Use. The danger or risk may occur when human receptors contact the soil on the AOC if the removal action does not occur.

The removal action (excavation and off-site disposal) of surface soil at DU03 will prevent Resident Receptors from contacting benzo(a)pyrene.

The removal action selected in the EE/CA was considered protective because this action would remove locations of soil where benzo(a)pyrene were identified and pose a hazard/risk to the Residential Receptor. Once the removal action is fully implemented, there will be no remaining risks.

6. IDENTIFICATION OF ALTERNATIVES

This section describes the removal action alternatives developed for the AOC and the individual analysis of each.

6.1 INTRODUCTION

Removal action alternatives should assure adequate protection of human health and the environment, achieve Removal Action Objectives, meet Applicable or Relevant and Appropriate Requirements (ARARs), and if applicable, permanently, and significantly reduce the volume, toxicity, and/or mobility of contaminants.

The two Alternatives considered in this EE/CA are:

- Alternative 1 – no action
- Alternative 2 – excavation with off-site disposal for surface soil with benzo(a)pyrene to attain Unrestricted (Residential) Land Use

6.2 ALTERNATIVE 1: NO ACTION

The no action alternative is required for evaluation under the NCP (USEPA, 1990). This alternative is the baseline to which other alternatives are compared. This alternative assumes all current actions (e.g., access restrictions and environmental monitoring) are discontinued and assumes no future actions will take place to protect human receptors, ecological receptors, or the environment. Impacted media at the AOC would not be removed or treated.

6.3 ALTERNATIVE 2: EXCAVATION AND OFF-SITE DISPOSAL FOR SURFACE SOIL

Alternative 2 involves the excavation and off-site disposal of surface soil (0-1 foot bgs) at DU03 (for benzo(a)pyrene in surface soil surrounding Building 47-40). Implementing this remedial action will achieve Unrestricted (Residential) Land Use.

This remedial alternative requires coordinating remediation activities with Ohio EPA, OHARNG, and the Army. Coordinating with stakeholders during implementation of the excavation will minimize health and safety risks to on-site personnel and potential disruptions of CJAG activities. The time period to complete this remedial action is relatively short and will not include long term monitoring, as an Unrestricted (Residential) Land Use scenario will be achieved. Components of this remedial alternative include:

- Removal action work plan,
- Brush removal,
- Waste characterization sampling,
- Soil excavation and off-site disposal for DU03 (0 to 1 foot bgs) for benzo(a)pyrene,
- Confirmation soil sampling and surveying, and
- Restoration.

Excavating the specific location where the concentrations of contaminants were identified in the CES (Section 3 of the EE/CA) as requiring removal allows the AOC to meet Unrestricted

(Residential) Land Use. These locations assessed in the SI (Parsons, 2018) were from ISM sample locations in surface soil.

6.4 CONTRIBUTION TO REMEDIAL PERFORMANCE

Once the removal action and disposal are complete, no further action will be required under CERCLA because Unrestricted (Residential) Land Use will be achieved.

6.5 COST DETERMINATION IN THE EE/CA

The present value cost to complete Alternative 2 is approximately \$130,291 (in base year 2020 dollars). Costs include sampling, implementing the removal, off-site disposal, and site restoration. See Attachment 1 (Appendix B of the EE/CA) for a detailed description of Alternative 2 costs.

6.6 OUTCOME

Alternative 2 would be an effective method of removing and disposing contaminated surface soil at the AOC. Excavation and off-site disposal are conventional technologies which can be readily implemented. This alternative would also be effective for eliminating PAHs in soil. This alternative protects human health and the environment, and once implemented, the AOC would meet Unrestricted (Residential) Land Use.

6.7 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The NCP (USEPA, 1990) established a general requirement that response actions comply with ARARs, based on site-specific conditions. Applicable requirements are promulgated environmental cleanup standards, standards of control, and other substantive requirements, criteria, or limitations that specifically address a hazardous substance, remedial action, location, or other circumstances found at a release site. Relevant and appropriate requirements are promulgated environmental cleanup standards, standards of control, and other substantive requirements, criteria, or limitations that, while not legally “applicable” to the site conditions, address problems or situations sufficiently similar to those encountered at the site that their use is well suited for the site. Other “to be considered” (TBC) criteria, such as non-promulgated policy and guidance documents, may also be useful in directing a response action at a site. All ARARs and TBC criteria are identified on the basis of site-specific information about the contaminant present, site features, and response actions being considered. Action-specific criteria and other information to be considered evaluated for CC RVAAP-70 East Classification Yard are presented in Attachment 5. No chemical- or location-specific ARARs were identified.

7. AGENCY COORDINATION AND PUBLIC INVOLVEMENT

The Ohio EPA is the state regulatory agency for the restoration activities at the former RVAAP. The Army coordinated the preparation of the EE/CA with the Ohio EPA. The Ohio EPA concurred with the Final EE/CA (dated January 28, 2021) along with the selected Alternative 2 on February 11, 2021. The Final (approved) EE/CA was published for public review and comment as described in the following paragraph.

Community involvement is a necessary part of the CERCLA process. The NCP requires that a public notice describing the EE/CA and announcing a public comment period be published in a major local newspaper. In March 2021, the Army published the notice of availability of the Final EE/CA for public review. The notice of availability was published in two local newspapers. The public review period began on March 1, 2021 and ended March 30, 2021. The public comment period provided appropriate opportunity for the public to be involved in site-related decisions. No comments were received on the EE/CA from the public during the review period.

In addition to providing the EE/CA to the public for comment, CERCLA 42 U.S.C. 9617(a) requires that an Administrative Record be established “at or near the facility at issue.” Relevant documents regarding the RVAAP Restoration Program have been made available to the public. The Administrative Record for this project is available at the following location:

Camp James A. Garfield Joint Military Training Center (CJAG)

Environmental Office
1438 State Route 534 SW
Newton Falls Ohio 44444
(614) 336-6136

Note: Access is controlled to Camp James A. Garfield, but the file can be viewed with prior notice.

In addition, an Information Repository of current information and final documents is available to any interested reader at the following libraries:

Reed Memorial Library

167 East Main Street
Ravenna, Ohio 44266

Newton Falls Public Library

204 South Canal Street
Newton Falls, Ohio 44444-1694

The RVAAP Restoration Program has an online resource for restoration news and information. This website can be viewed at www.rvaap.org.

8. RESPONSIVENESS SUMMARY

No comments were received on the EE/CA from the public during the review period (March 1, 2021 and ended March 30, 2021).

9. PROPOSED ACTIONS AND ESTIMATED COSTS

9.1 DESCRIPTION

Alternative 2 (Excavation and Off-site Disposal) is the recommended action for the CC RVAAP-70 AOC. The recommendation is based on the findings from the SI and EE/CA which demonstrated that benzo(a)pyrene was present in the surface soil at DU03.

Alternative 2 involves the excavation and off-site disposal of surface soil (0 to 1 foot bgs) at DU03 (for benzo(a)pyrene in surface soil surrounding Building 47-40). Implementing this remedial action will achieve Unrestricted (Residential) Land Use. Table 9-1 presents the estimate the amount of soil that needs to be excavated and disposed off-site.

This remedial alternative requires coordinating remediation activities with Ohio EPA, OHARNG, and the Army. Coordinating with stakeholders during implementation of the excavation will minimize health and safety risks to on-site personnel and potential disruptions of CJAG activities. The time period to complete this remedial action is relatively short and will not include long term monitoring, as Unrestricted (Residential) Use will be achieved. Components of this remedial alternative include:

- Removal action work plan,
- Brush removal,
- Waste characterization sampling,
- Soil excavation and off-site disposal at DU03 (0 to 1 foot bgs) for benzo(a)pyrene,
- Confirmation soil sampling and surveying, and
- Restoration.

Excavating the specific location where the concentrations of contaminants were identified in the CES (Section 3 of the EE/CA) as requiring removal allows the AOC to meet Unrestricted (Residential) Land Use. These locations assessed in the SI (Parsons, 2018) were from ISM sample locations in surface soil.

Table 9-1 presents the calculations and values used to estimate the amount of soil that needs to be excavated and disposed off-site. An estimated total volume of 370 cubic yards is identified for excavation and off-site disposal of surface soil (0-1 foot bgs). Based on the results in Section 3, the surface soil DU defined by ISM sample location 70-4740-DU3-SS (for benzo(a)pyrene) is recommended for removal action in this EE/CA to eliminate this chemical in the surface soil (0-1 foot bgs). Figure 2-4 presents the area for excavation.

Table 9-1: Volumes of Soil Requiring Removal

Decision Unit	Sample Location	Area (square feet)	Depth (feet bgs)	In Situ Volume (cubic feet)	Excavated Volume (cubic yards) ^(a)
DU03 ^(b)	70-4740-DU3-SS	8,321	0-1	8,321	370
			Total	8,321	370

Notes:

a - includes 20% swell factor

b - DU03 was established as a 15-foot zone surrounding the exterior perimeter of Building 47-40. The 15-foot perimeter of Building 47-40 will be excavated to a depth of 1 foot bgs.

bgs = below ground surface

9.2 COSTS

Cost analyses for the Alternative 2 includes an estimate of the capital cost in dollars and indicates the period of time to complete the proposed action. The present value cost to complete Alternative 2 is approximately \$130,291 (in base year 2020 dollars). Costs include development of a work plan, vegetation removal, confirmation and waste sampling, implementing the removal, off-site disposal, and site restoration. See Appendix B of the EE/CA for a detailed description of Alternative 2 costs.

Any costs relative to the continued use and management of the AOC for military use are not a function of CERCLA or of the EE/CA and are not considered further.

Excavation of surface soil in DU03 will allow the CC RVAAP- 70 AOC to meet Unrestricted (Residential) Land Use. The location where the removal action is planned is presented in Figure 2-4.

9.3 EXCAVATION, REMOVAL, AND DISPOSAL

9.3.1 Removal Action Work Plan

A Removal Action Work Plan will be developed prior to initiating removal actions. The Removal Action Work Plan will include an outline of construction requirements; site preparation activities (e.g., staging and equipment storage areas, truck routes, and storm water controls); sampling; defining the extent of soil removal; the sequence of excavation activities; decontamination; and segregation, transportation, and disposal of the waste, and site restoration. Erosion controls and health and safety controls will be developed as part of the Removal Action Work Plan to ensure protection of remediation workers and the environment. Waste characterization sampling will be completed in accordance with OHARNG and disposal facility requirements.

9.3.2 Brush Removal

It will be necessary to remove brush from around the exterior of Building 47-40 to access sampling and excavation locations. Brush cutting will be limited to areas necessary to access the sample and excavation locations. Brush cutting details will be included in the Removal Action Work Plan and will be coordinated with the CJAG Natural Resource Manager.

9.3.3 Waste Characterization Sampling

A sampling plan will be included in the Removal Action Work Plan. Surface soil samples will be analyzed for analytes to aid in waste characterization. Waste characterization analysis would be completed to confirm the excavated material is non-hazardous. Prior to excavation, soil would be sampled and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals and mercury, TCLP SVOCs, TCLP pesticides, TCLP herbicides, reactive cyanide, reactive sulfide, and PCBs to support waste profiling requirements for off-site disposal or as required by the receiving landfill. Based on available site data and for cost estimating purposes, the excavated soil is assumed to be non-hazardous and is anticipated to be disposed of at a Resource Conservation and Recovery Act (RCRA) Subtitle D permitted landfill.

9.3.4 Excavation and Off-site Disposal of Soil

Site preparation would include clearing any obstacles, surface structures, or vegetation (section 9.3.2) that would interfere with excavation, identifying utilities (no utilities are anticipated), and setting up temporary decontamination facilities. In addition, sediment and erosion control measures will be installed as needed to control runoff from the work area. Dust generation will be minimized during excavation activities by keeping equipment movement areas and excavation areas misted with water. The health and safety of remediation workers, CJAG employees, and the general public will be detailed in a site-specific health and safety plan.

To achieve a scenario in which the AOC is protective for Unrestricted (Residential) Land Use under CERCLA, surface soil will be removed from the proposed excavation locations shown on Figure 2-4. Approximately 370 yds³ will be removed from the excavation site for disposal.

The excavated surface soil at DU03 (0 to 1 foot bgs) will be directly loaded onto trucks for off-site disposal at a licensed and permitted disposal facility.

Soil removal will be accomplished using conventional construction equipment such as backhoes, bulldozers, front-end loaders, and scrapers. Oversize debris will be crushed or otherwise processed to meet disposal facility requirements.

Soil will be hauled by truck to a licensed and permitted disposal facility. All trucks will be inspected prior to exiting the AOC. Appropriate waste manifests will accompany each waste shipment. Only regulated and licensed transporters and vehicles will be used. All trucks will travel pre-designated routes within CJAG.

Residual solid waste (if any) will be managed under the waste management plan and any solid waste identified during excavation will be removed and properly disposed. Excavated soil will be disposed at an existing off-site facility licensed and permitted to accept the characterized waste stream. The selection of an appropriate facility considers the type of waste, location, transportation options, and cost.

9.4 CONFIRMATION SAMPLING AND SITE RESTORATION

9.4.1 Confirmation Sampling

Upon completing the excavations at the AOC, confirmatory samples will be collected to ensure contaminated soils have been successfully removed. Once the laboratory analysis determines concentrations are below removal action cleanup goals, the AOC will meet requirements for Unrestricted (Residential) Land Use.

9.4.2 Surveying and Mapping

Prior to and upon completion of the surface work, a surveyor (licensed in State of Ohio) will survey the excavation extents. The surveyor will record a northing, easting, elevation, and brief description for each surveyed location, including control points for each corner of each excavation. Horizontal coordinates will be referenced to the Ohio State Plan Coordinate System and will be surveyed with an accuracy of at least 1 foot. Vertical measurements will be referenced to the National Geodetic Vertical Datum of 1929 and surveyed with an accuracy of at least 0.01 feet.

9.4.3 Restoration

Upon completing soil excavation, all disturbed and excavated areas will be backfilled with clean soil and graded to meet neighboring contours. The backfill soil will be sampled by the removal action contractor to ensure it is not contaminated. After the area is backfilled and graded, workers will apply a seed mixture (as approved by OHARNG) and mulch. Restored areas will be inspected and monitored as required in the storm water best management practices established in the Removal Action Work Plan.

9.4.4 Reporting

Upon completion of all field activities, a Removal Action Completion Report will be prepared that includes excavation details and sampling data from the removal action.

10. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If Alternative 2 is not implemented, negative impacts to the current usability of the AOC for training purposes will occur. Alternative 2 as presented in the EE/CA, allows the OHARNG to remove the restrictions and use the AOC for training as needed or for Unrestricted (Residential) Land Use. Additionally, no more actions such as Five-Year Reviews would be required if the removal action is implemented.

This Alternative allows the AOC to be removed from the CERCLA process and used as needed. If this Alternative is not implemented, the AOC would remain in the CERCLA process and would require implementation and maintenance of Land Use Controls, and implementation of Five-Year Reviews. Additionally, if this Alternative is not implemented, the AOC will remain unsuitable for the mission-planned use.

11. OUTSTANDING POLICY ISSUES AND ENFORCEMENT

11.1 OUTSTANDING POLICY ISSUES

There are no outstanding policy issues.

11.2 ENFORCEMENT

CJAG (inclusive of the CC RVAAP-70 AOC) is a federal facility that is licensed to the OHARNG for use as a military training site. The U.S. Army/OHARNG are responsible for continuing the management of the site per applicable Army Regulations, policies and CERCLA until the removal action is completed.

The Ohio EPA is the state regulatory agency that will review the NTCRA. The EE/CA was prepared in consultation with Ohio EPA. Ohio EPA provided input during the ongoing investigation and report development process to ensure the removal action ultimately selected meets the needs of the state of Ohio and fulfills the requirements of the Director's Final Finding and Orders (Ohio EPA, 2004).

Because the AOC is located within CJAG, no additional enforcement components are needed. Once the removal action is completed, the AOC will meet requirements for Unrestricted (Residential) Land Use, so enforcement components will not be required.

12. RECOMMENDED ALTERNATIVE

This Action Memorandum (Decision Document) represents the selected removal action for the CC RVAAP-70 AOC. The recommended Alternative for CC RVAAP-70 East Classification Yard is Alternative 2: Excavation with Off-site Disposal. This alternative will attain Unrestricted (Residential) Land Use for the AOC. Surface soil contaminated with benzo(a)pyrene will be removed from the AOC, hauled to a licensed and permitted disposal facility, and appropriately disposed. The removal areas will be restored with clean fill material.

No long-term monitoring or five-year reviews would be required under CERCLA. Any solid waste identified during excavation will be removed and properly disposed. Approximately 370 yds³ of contaminated soil will be removed from the AOC for off-site disposal. This removal will be conducted as a NTCRA and will achieve quick, protective results at the AOC and was determined to be cost effective (estimated \$130,291). Figure 2-4 provides the location of the area that requires removal. Appendix B of the EE/CA includes breakdown of the costs and other information used to make this estimate and is included as Attachment 1 of this Action Memorandum.

13. REFERENCES

- Environmental Chemical Corporation (ECC), 2012. *Final Site Inspection and Remedial Investigation Work Plan at Compliance Restoration Sites, Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio*. October 3.
- Ohio Environmental Protection Agency (Ohio EPA), 2004. *Director's Final Findings and Orders for the Ravenna Army Ammunition Plant*. June 2004.
- Ohio EPA, 2019. Letter from Edward J D'Amato (Ohio EPA- Division of Environmental Response and Revitalization) to David Connolly (Army National Guard Directorate): Draft Work Plan Addendum. Additional Sampling for CC RVAAP-70 East Classification Yard. August 30.
- Parsons, 2017. *Final Work Plan, Additional Sampling for CC RVAAP-69 Building 1048 Fire Station, CC RVAAP-70 East Classification Yard, and CC RVAAP-74 Building 1034 Motor Pool Hydraulic Lift, Ravenna Army Ammunition Plant Restoration Program, Camp Ravenna, Portage and Turnbull Counties, Ohio*. November 30.
- Parsons, 2018. *Final Site Investigation Report for CC RVAAP-70 East Classification Yard, Ravenna Army Ammunition Plant Restoration Program, Camp Ravenna, Portage and Turnbull Counties, Ohio*. October 31.
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- Parsons, 2021. *Final Engineering Evaluation/Cost Analysis for CC RVAAP-70 East Classification Yard, Ravenna Army Ammunition Plant Restoration Program, Portage and Trumbull Counties, Ohio*. January 28.
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- U.S. Environmental Protection Agency (USEPA), 1990. National Oil and Hazardous Substances Contingency Plan (NCP).
- USEPA, 2009. Superfund Removal Guidance for Preparing Action Memoranda. Office of Emergency Management, Office of Solid Waste and Emergency Response, USEPA, Washington, D.C. 20460. September.
- USEPA, 2017. *Toxicological Review of Benzo[a]pyrene [CASRN 50-32-8]*, Integrated Risk Information System, National Center for Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency, Washington, DC. January 2017.
- USEPA, 2018. *Regional Screening Level Summary Table (Target Risk=1E-06, HQ=0.1)*, May.
- USEPA, 2020. *Regional Screening Level Summary Table (Target Risk=1E-06, HQ=0.1)*, November.

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**Attachment 1: Detailed Cost Estimate from 2020 Engineering Evaluation / Cost Analysis
Appendix B**

Table B-1: Summary of Costs for Remedial Alternatives

	Alternative	Duration	Non-Discounted Cost	
			Capital Cost	Total Cost
1	No Action	0	\$0	\$0
2	Excavation/removal	<1 year	\$118,446	\$130,291

Notes:

The base year of comparison and cost is CY2020.

Costs were estimated for comparison purposes only and are believed to be accurate within a range of -30% to +50%. Use of these costs for other purposes, including but not limited to budgeting or construction cost estimating is not appropriate.

Table B-2: Summary of AOC Areas and Volumes

Alternative	Media	Treatment Interval (feet bgs)	Surface Area (feet²)	Volume¹ (acre)	Volume¹ (cubic yards)	Weight² (ton)
2 Excavation/removal	Surface Soil	0-1	8,321	0.19	370	462

Notes:

1. Includes 20% swell factor.
2. Assuming 1 cubic yard wet soil weighs 1.25 tons.

Table B-3: Capital and Fixed Costs

Item	Quantity	Units	Unit Cost	Present Worth
Removal Action Work Plan				
Labor	160	hours	\$ 150	\$ 24,000
Pre-Excavation Waste Characterization Sampling				
Sampling Labor	8	hours	\$ 100	\$ 800
Analytical Cost - Waste Characterization	2	Samples	\$ 559	\$ 1,118
Construction Cost				
Mobilization, Site Preparation, and Submittals	1	LS	\$ 12,000	\$ 12,000
Non-Haz Soil Excavation	462	Ton	\$ 5.00	\$ 2,311
Transportation of Impacted Soil	462	Ton	\$ 25.70	\$ 11,881
Disposal of Impacted Soil	462	Ton	\$ 38.10	\$ 17,613
Backfill and Compaction	462	Ton	\$ 15.00	\$ 6,934
Site Restoration	0.19	Acre	\$ 7,000	\$ 1,337
Demobilization	1	LS	\$ 10,000	\$ 10,000
Confirmation Sampling				
Sampling Labor	8	hours	\$ 100	\$ 800
Analytical Cost - Confirmation DU03	12	Samples	\$ 196	\$ 2,352
Construction Oversight				
Construction Oversight	1	Week	\$ 4,800	\$ 4,800
Surveying	1	LS	\$ 1,500	\$ 1,500
Construction Management Support	1	Week	\$ 1,000	\$ 1,000
Removal Action Completion Report	1	LS	\$ 20,000	\$ 20,000
Capital and Fixed Cost Subtotal				\$ 118,446
Undeveloped Details/Contingency	10%			\$ 11,845
			Total Cost	\$ 130,291

Notes and Assumptions:

1. All material and waste removed is assumed to be non-hazardous and can be disposed at a RCRA Subtitle D permitted landfill.

Attachment 2: Public Notice

PUBLIC NOTICE

Camp James A. Garfield Joint Military Training Center

Environmental Office

1438 State Route 534 SW-Newton Falls, Ohio 44444

614-336-6136

Release of an Engineering Evaluation/Cost Analysis Report for East Classification Yard at the Former Ravenna Army Ammunition Plant

The Army National Guard, in consultation with the Ohio Environmental Protection Agency, submits for public review and comment an Engineering Evaluation/Cost Analysis (EE/CA) for a site at the former Ravenna Army Ammunition Plant (RVAAP) in Portage and Trumbull counties, Ohio.

East Classification Yard is within the former RVAAP (now known as Camp James A. Garfield or CJAG) in Portage and Trumbull Counties, Ohio. This site is being addressed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EE/CA presents the current status and information regarding the site. The EE/CA details the recommendation for the site and provides the rationale for this recommendation.

Written comments regarding the recommendations may be submitted to the Army National Guard during the 30-day comment period from March 1, 2021 to March 30, 2021. All written comments should be addressed to CJAG Environmental Office; 1438 State Route 534 SW, Newton Falls, Ohio, 44444 or sent via email to kathryn.s.tait.nfg@mail.mil.

The EE/CA and earlier remedial investigation reports are available for public review at the RVAAP Restoration Program Information Repository at the Reed Memorial Library (167 East Main Street, Ravenna) and the Newton Falls Public Library (204 South Canal Street, Newton Falls). The reports are also available online at www.rvaap.org.

The final remedy for the site will be selected based, in part, on public comments. In coordination with the Ohio Environmental Protection Agency, the Army National Guard will select a final remedy after reviewing and considering all public comments received during the 30-day public comment period. The Army National Guard encourages the public to review and comment on the recommendation presented in this document.

For more information or to participate in the review, please visit the RVAAP Restoration website (www.rvaap.org) or call Katie Tait at 614-336-6136.

Attachment 3: Affidavit from Kent Record Courier Newspaper



Copley Ohio Newspapers, Inc.
The Alliance Review | The Daily Record
Record-Courier | Times-Gazette | The Daily Jeff

PO Box 630599 Cincinnati, OH 45263-0599

PROOF OF PUBLICATION

Edward Heyse
16904 Linton RD
Athens AL 35613-5834

STATE OF OHIO, COUNTY OF PORTAGE

The Record Courier, a newspaper printed and published in the city of Kent, and of general circulation in the County of Portage, State of Ohio, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue:

02/28/2021, 03/07/2021

and that the fees charged are legal.

Sworn to and subscribed before on 03/07/2021

Legal Clerk: Amy Kohott
Notary, State of WI, County of Brown: Vicky Felty
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PUBLIC NOTICE
Camp James A. Garfield Joint Military Training Center
Environmental Office
1438 State Route 534 SW-Newton Falls, Ohio 44444
614-336-6136
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The Army National Guard, in consultation with the Ohio Environmental Protection Agency, submits for public review and comment an Engineering Evaluation/Cost Analysis (EE/CA) for a site at the former Ravenna Army Ammunition Plant (RVAAP) in Portage and Trumbull counties, Ohio.
East Classification Yard is within the former RVAAP (now known as Camp James A. Garfield or CJAG) in Portage and Trumbull Counties, Ohio. This site is being addressed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EE/CA presents the current status and information regarding the site. The EE/CA details the recommendation for the site and provides the rationale for this recommendation.
Written comments regarding the recommendations may be submitted to the Army National Guard during the 30-day comment period from March 1, 2021 to March 30, 2021. All written comments should be addressed to CJAG Environmental Office; 1438 State Route 534 SW, Newton Falls, Ohio, 44444 or sent via email to kathryn.s.tait.nfg@mail.mil.
The EE/CA and earlier remedial investigation reports are available for public review at the RVAAP Restoration Program Information Repository at the Reed Memorial Library (167 East Main Street, Ravenna) and the Newton Falls Public Library (204 South Canal Street, Newton Falls). The reports are also available online at www.rvaap.org.
The final remedy for the site will be selected based, in part, on public comments. In coordination with the Ohio Environmental Protection Agency, the Army National Guard will select a final remedy after reviewing and considering all public comments received during the 30-day public comment period. The Army National Guard encourages the public to review and comment on the recommendation presented in this document.
For more information or to participate in the review, please visit the RVAAP Restoration website (www.rvaap.org) or call Katie Tait at 614-336-6136.
2/28, 3/7/21 (5602641)

Attachment 4: Affidavit from Warren Tribune Newspaper

PROOF OF PUBLICATION

PUBLIC NOTICE
Camp James A. Garfield Joint
Military Training Center
 Environmental Office
 1438 State Route 534 SW
 Newton Falls, Ohio 44444
 614-336-6136

Release of an Engineering Evaluation/Cost Analysis Report for East Classification Yard at the Former Ravenna Army Ammunition Plant The Army National Guard, in consultation with the Ohio Environmental Protection Agency, submits for public review and comment an Engineering Evaluation/Cost Analysis (EE/CA) for a site at the former Ravenna Army Ammunition Plant (RVAAP) in Portage and Trumbull counties, Ohio.

East Classification Yard is within the former RVAAP (now known as Camp James A. Garfield or CJAG) in Portage and Trumbull Counties, Ohio. This site is being addressed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The EE/CA presents the current status and information regarding the site. The EE/CA details the recommendation for the site and provides the rationale for this recommendation.

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#059-2T-February 28 & March 7, 2021 - #5891

STATE OF OHIO
 TRUMBULL COUNTY

SS: CONNIE PACEK

BEING DULY SWORN, UPON OATH STATES THAT SHE IS AN AUTHORIZED REPRESENTATIVE OF EASTERN OHIO NEWSPAPERS INC, PUBLISHERS OF THE TRIBUNE CHRONICLE AND THE VINDICATOR (an edition of the Tribune Chronicle), NEWSPAPERS PRINTED AND IN THE GENERAL CIRCULATION OF TRUMBULL, MAHONING, COLUMBIANA COUNTIES IN OHIO AND IN MERCER COUNTY IN PENNSYLVANIA

THE ATTACHED ADVERTISEMENT WAS PUBLISHED IN:

- THE TRIBUNE CHRONICLE
- THE VINDICATOR

EVERY: SUNDAY
 FOR TWO CONSECUTIVE WEEKS AND
 THAT THE FIRST INSERTION WAS ON SUNDAY
 THE 28th DAY OF FEBRUARY 2021
Connie Pacek

SWORN TO BEFORE ME AND SUBSCRIBED IN MY PRESENCE ON THIS
12th DAY OF MARCH 2021

[Signature]
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LAWRENCE J. KOVACH, Notary Public
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 MY COMMISSION EXPIRES SEPTEMBER 23, 2022

ADVERTISING COST \$ 712.66

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Attachment 5: ARARs

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Potential Action-Specific ARARs

ACTION	REGULATORY AUTHORITY	REQUIREMENT	STATUS	DESCRIPTION
Soil Excavation	State	OAC Section 3745-15-07	Applicable	These rules prohibit a release of nuisance air pollution that endanger health, safety, or welfare of the public or cause personal injury or property damage.
Soil Excavation	Federal	40 CFR Part 450	Not Applicable	Storm water requirements at construction sites. These rules require that storm water controls be employed at construction sites that exceed 1 acre. The area of excavation is anticipated to be less than 1 acre.
Soil Excavation	State	OAC Section 3745-52-11	Potentially Applicable	These rules require that a generator determine whether a material generated is a hazardous waste. Applies to any material that is or contains a solid waste. Must be characterized to determine whether the material is or contains hazardous waste. Excavated soil is not expected to be hazardous.
Management	State	OAC Sections 3745-52-30 through 3745-54-34	Potentially Applicable	Management of contaminated waste material that is or contains a hazardous waste generated from on-site activities. All hazardous waste must be accumulated in a complaint manner that includes proper packaging, labeling, marking, and placarding in accordance with the specified regulations. This includes inspecting containers or container areas where hazardous waste is accumulated on site. Excavated soil is not expected to be hazardous.
Offsite Land Disposal	State	OAC Sections 3745-52-20 through 3745-52-33	Potentially Applicable	Requires the acquisition and use of a uniform hazardous waste manifest for hazardous waste shipments to off-site treatment, storage, or disposal facilities. Excavated soil is not expected to be hazardous.
Offsite Land Disposal	State	OAC 3745-27-05	Applicable	Establishes standard for disposal of non-hazardous solid wastes in the state of Ohio. Applies to solid waste material that is contaminated but not a hazardous waste for disposal. Establishes allowable methods of solid waste disposal and prohibits management by open burning or dumping.

Notes:

ARAR – Applicable or Relevant and Appropriate Requirements; CFR – Code of Federal Regulations; OAC – Ohio Administrative Code; RCRA – Resource Conservation and Recovery Act

Other Information To Be Considered (TBC)

REGULATORY AUTHORITY	MEDIA	REQUIREMENT	STATUS	SYNOPSIS OF REQUIREMENT
Federal	Soil	USEPA RSLs	TBC	USEPA RSLs are risk-based screening tools for evaluating contaminated sites. They are not enforceable standards. RVAAP Restoration Program FWCUGs are based on RSLs. The cleanup goal for benzo(a)pyrene of 1.1 mg/kg is based on the Residential RSL.

Notes:

ARARs – Applicable or Relevant and Appropriate Requirements

FWCUGs—Facility-Wide Cleanup Goals

RSLs – Regional Screening Levels

RVAAP – Ravenna Army Ammunition Plant

TBC – to be considered