Final

Proposed Plan for Wet Sediment and Surface Water at RVAAP-12 Load Line 12

Former Ravenna Army Ammunition Plant Portage and Trumbull Counties, Ohio

Contract No. W912QR-15-C-0046

Prepared for:



US Army Corps of Engineers.

U.S. Army Corps of Engineers Louisville District

Prepared by:



Leidos 8866 Commons Boulevard, Suite 201 Twinsburg, Ohio 44087

November 9, 2017

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CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

Leidos has completed the Proposed Plan for Wet Sediment and Surface Water at RVAAP-12 Load Line 12 at the Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions; methods, procedures, and materials to be used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing United States Army Corps of Engineers (USACE) policy. In addition, an independent verification was performed to ensure all applicable changes were made per regulatory and Army comments.

Heather Adams, P.G. Study/Design Team Leader

Selvam Arunachalam, P.E. Independent Technical Review Team Leader

Significant concerns and the explanation of the resolution are as follows:

Internal Leidos Independent Technical Review comments are recorded on a Document Review Record per Leidos standard operating procedure ESE A3.1 Document Review. This Document Review Record is maintained in the project file. Changes to the report addressing the comments have been verified by the Study/Design Team Leader. As noted above, all concerns resulting from independent technical review of the project have been considered.

Lisa Jones-Bateman Senior Program Manager

11/9/2017

Date

11/9/2017 Date

11/9/2017 Date



John R. Kasich, Governor Mary Taylor, Lt. Governor Craig W. Butler, Director

January 16, 2018

Mr. Mark Leeper Team Lead Cleanup and Restoration Branch ARNG Directorate 111 South George Mason Arlington, VA 22204 Re: US Army Ravenna Ammunition Plt RVAAP Remediation Response Project records Remedial Response Portage County 267000859122

Subject: Approval of Final Proposed Plan for Wet Sediment and Surface Water at Load Line 12 for the Former Ravenna Army Ammunition Plant (RVAAP) Document, (Work Activity No. 267-000859-122)

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) received the Final Proposed Plan for Wet Sediment and Surface Water at RVAAP-12 Load Line 12 on November 14, 2017. The conclusions of the Proposed Plan found that the area is protective for the resident receptor, and that no additional remedial activities are required.

We have no comments on the Final Proposed Plan for Load Line 12 Wet Sediment and Surface Water. Ohio EPA approves the Final Proposed Plan for Wet Sediment and Surface Water at RVAAP-12 Load Line 12.

The Army will offer a public comment period and hold an open house/public meeting to present the conclusions and investigative findings for Wet Sediment and Surface Water at RVAAP-12 Load Line 12.

If you have any questions concerning the above, please feel free to contact Sue Netzly-Watkins at (330) 963-1201

Sincerely,

Michael Proffitt, Chief Division of Environmental Response and Revitalization

SN-W/nvp

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Final

Proposed Plan for Wet Sediment and Surface Water at RVAAP-12 Load Line 12

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Contract No. W912QR-15-C-0046

Prepared for: U.S. Army Corps of Engineers Louisville District

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November 9, 2017

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ARNG = Army National Guard.

CO = Central Office.

DERR = Division of Environmental Response and Revitalization.

IED = Installation & Environment Division.

NEDO = Northeast District Office.

OHARNG = Ohio Army National Guard.

Ohio EPA = Ohio Environmental Protection Agency.

REIMS = Ravenna Environmental Information Management System.

SWDO = Southwest District Office.

USACE = U.S. Army Corps of Engineers.

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Attachment A. Ohio EPA Comments

LIST OF ACRONYMS

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Area of Concern
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Below Ground Surface
Comprehensive Environmental
Response, Compensation, and
Liability Act
Chemical of Concern
Chemical of Potential
Ecological Concern
Ecological Risk Assessment
Facility-wide Cleanup Goal
Facility-wide Groundwater
Monitoring Program
Human Health Risk
Assessment
Hazard Quotient
Ohio Environmental Protection
Agency
Polycyclic Aromatic
Hydrocarbon
2008 Performance-based
Acquisition
Polychlorinated Biphenyl
Proposed Plan
Hexahydro-1,3,5-trinitro-1,3,5-
triazine
Remedial Investigation
Record of Decision
Ravenna Army Ammunition
Plant
Screening Level
2,4,6-Trinitrotoluene
Target Risk
Volatile Organic Compound

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1.0 INTRODUCTION

This Proposed Plan (PP) presents the conclusions and recommendations for wet sediment and surface water within the Load Line 12 area of concern (AOC) at the former Ravenna Army Ammunition Plant (RVAAP). The former RVAAP is now known as Camp Ravenna Joint Military Training Center, abbreviated as Camp Ravenna, and is located in Portage and Trumbull counties, Ohio (Figure 1). Load Line 12 is designated as AOC RVAAP-12. The U.S. Department of the Army (Army), in coordination with the Ohio Environmental Protection Agency (Ohio EPA), issues this PP to provide the public with information necessary to comment on the selection of an appropriate response action. The remedy will be selected for Load Line 12 after all comments submitted during the 30day public comment period are considered. Therefore, the public is encouraged to review and comment on all alternatives presented in this PP.

The Army is issuing this PP as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended Superfund Amendments by the and Reauthorization of 1986 Act and Section 300.430(f) (2) of the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations 300). Selecting and implementing a remedy will also be consistent with the requirements of the Ohio EPA Director's Final Findings and Orders, dated June 10, 2004.

This PP summarizes information that can be found in detail in the *Phase III Remedial Investigation Report for Wet Sediment and Surface Water at RVAAP-12 Load Line 12* (USACE 2017a; herein referred to as the Phase III RI Report) and other documents contained in the Administrative Record file for Load Line 12.

Soil and dry sediment aggregates are not included in the scope of this report. These

Public Comment Period: June 6, 2018 to July 6, 2018

Public Meeting:

The Army will hold an open house and public meeting to present the conclusions and additional details presented in the *Phase III Remedial Investigation Report for Wet Sediment and Surface Water at RVAAP-12 Load Line 12* (USACE 2017a). Oral and written comments will also be accepted at the meeting. The open house and public meeting are scheduled for 6:00 PM, June 21, 2018, at the Shearer Community Center, 9355 Newton Falls Road, Ravenna, Ohio 44266.

Information Repositories:

Information used in selecting the remedy is available for public review at the following locations:

Reed Memorial Library

167 East Main Street Ravenna, Ohio 44266 (330) 296-2827

Hours of operation: 9AM-9PM Monday-Thursday 9AM-6PM Friday 9AM-5PM Saturday 1PM-5PM Sunday

Newton Falls Public Library

204 South Canal Street Newton Falls, Ohio 44444 (330) 872-1282

Hours of operation: 9AM-8PM Monday-Thursday 9AM-5PM Friday and Saturday

Online

http://www.rvaap.org/

The **Administrative Record File**, containing information used in selecting the remedy, is available for public review at the following location:

Camp Ravenna Joint Military Training Center (former Ravenna Army Ammunition Plant) Environmental Office 1438 State Route 534 SW

Newton Falls, Ohio 44444 (614) 336-6136 Note: Access is restricted to Camp Ravenna, but the file can be obtained or viewed with prior notice to Camp Ravenna.

media were addressed in the *Record of Decision for Soil and Dry Sediment at RVAAP-12 Load Line 12* (USACE 2009) and are currently being further evaluated in the *Feasibility Study Addendum for Soil, Sediment, and Surface Water at RVAAP Load Lines 1, 2, 3, 4, and 12* (USACE 2017b). The Army's preferred alternative for wet sediment and surface water at Load Line 12 is no further action. The Army encourages the public to review the site background documents to gain a more comprehensive understanding of the AOC, activities that have been conducted to date, and the rationale for the preferred alternative.

2.0 RVAAP DESCRIPTION AND BACKGROUND

The facility, consisting of 21,683 acres, is federally owned and is located in northeastern Ohio within Portage and Trumbull counties, approximately 4.8 km (3 miles) east/northeast of the city of Ravenna and approximately 1.6 km (1 mile) northwest of the city of Newton Falls (Figure 1). The facility, previously known as RVAAP, was formerly used as a load, assemble, and pack facility for munitions As of September production. 2013. administrative accountability for the entire acreage of the facility has been transferred to the U.S. Property and Fiscal Officer for Ohio and subsequently licensed to the Ohio Army National Guard for use as a military training site (Camp Ravenna). References in this document to RVAAP relate to previous activities at the facility as related to former munitions production activities or to activities being conducted under the restoration/cleanup program.

3.0 LOAD LINE 12 BACKGROUND

Load Line 12 was originally known as an ammonium nitrate plant and began operations on November 25, 1941. Structures related to producing ammonium nitrate were the Neutral Liquor Building (Building FF-19) and seven evaporation/crystallization units (Buildings 900 through 906). The finished product was transferred from Building FN-54 to the melt-2,4.6lines for blending with pour trinitrotoluene (TNT) to produce Amatol. Ammonium nitrate production was terminated in May 1943.

From 1946–1950, a private contractor (Silas Mason Company) leased Load Line 12 to

produce 470,080 metric tons (518,246 tons) of fertilizer-grade ammonium nitrate.

From 1965–1967, Hercules Alcor, Inc. leased Building FF-19 to produce aluminum chloride.

From 1969–1971, Load Line 12 was activated in support of the Southeast Asian conflict. Load Line 12 produced 80,000,000 M54 primers during this timeframe (USATHAMA 1978).

In 1981, the Load Line 12 Pink Water Treatment Plant was built immediately east of Building 904 to treat the demilitarization effluent prior to discharge. The treatment plant consisted of a dual-mode activated-carbon filtration system.

From 1949–1993, munitions were periodically demilitarized at Load Line 12.

No historical information exists to indicate Load Line 12 was used for any other processes.

Multiple activities were conducted at Load Line 12 to decontaminate and demolish buildings, remove footers, and remove remaining infrastructure. Currently, there are no abovegrade structures remaining at Load Line 12. Buildings at Load Line 12, including building slabs and foundations. were decontaminated, demolished, and removed in December 1998 through June 2000 by MKM Engineers, Inc. These decontamination and demolition activities were conducted in four phases. Activities associated with Phases I through III are summarized in the Closure Report for Explosive Decontamination and Demolition of Selected Buildings at Load Line 12 through August 31, 1999 (MKM 1999). Activities associated with Phase IV are summarized in the Closure Report for Decontamination and Demolition of Load Line #12 (MKM 2000).

4.0 LOAD LINE 12 SITE DESCRIPTION

Load Line 12 is an approximately 76-acre fenced AOC located in the southeastern portion of Camp Ravenna, south of Newton Falls Road, east of Paris-Windham Road, north of South Service Road, and west of Load Line 3 (Figure 2). Remaining features at Load Line 12 include asphalt and gravel access roads, constructed drainage ditches and ponds, and railroad beds. The Load Line 12 fence is still in place, but it is not currently maintained. Load Line 12 is currently overgrown with grass, trees, and scrub vegetation.

The topography at Load Line 12 is generally flat to gently sloping (Figure 3). Load Line 12 is located within Hiram Till glacial deposits, except where disturbed by RVAAP activities. Soil at the AOC exhibits seasonal wetness, moderate to rapid runoff, and low permeability. When encountered, bedrock was observed at 15 ft below ground surface (bgs) in the north end of the AOC and 34 ft bgs in the south end. Groundwater was encountered from 1.93–15.38 ft bgs and groundwater elevations ranged from 966.35–976.53 ft above mean sea level with a flow pattern to the center portion of the AOC. The average hydraulic gradient at the AOC is 0.0046 ft/ft (USACE 2017a).

4.1 Spatial Aggregates

Spatial aggregates within Load Line 12 were established in the *Phase II Remedial Investigation Report for Load Line 12* (USACE 2004). Load Line 12 was determined to have soil, dry sediment, wet sediment, and surface water aggregates that were further evaluated during the remedial investigation (RI) process. These aggregates are presented on Figure 4 and are described in the following subsections.

4.1.1 Soil and Dry Sediment

Soil and dry sediment aggregates are not included in the scope of this PP. These aggregates include the Western Soil, Eastern Soil, Main Ditch, and West Ditches. In 2009, the *Record of Decision for Soil and Dry Sediment at RVAAP-12 Load Line 12* (USACE 2009) documented the selected remedial alternative (Excavation of Soil/Dry Sediment with Off-site Disposal – National Guard Trainee Land Use). The Record of Decision (ROD) was signed by the Branch Chief for the Base Realignment and Closure Division on August 20, 2009 and the Director of the Ohio EPA on October 13, 2009.

The remedial alternative was implemented in June 2010 to achieve National Guard Training Land Use (now referred to as Military Training Land Use). A total of 1,181 tons of arseniccontaminated dry sediment was removed from the Main Ditch. On August 16, 2010, Ohio EPA issued an approval letter for the completion of the remedial action.

In June 2017, the Army finalized the *Feasibility Study Addendum for Soil, Sediment, and Surface Water at RVAAP Load Lines 1, 2, 3, 4, and 12* (USACE 2017b). This FS Addendum was completed, in part, to provide an updated human health risk assessment (HHRA) and evaluate remediation scenarios for the Resident Receptor (Adult and Child) and Industrial Receptor (USEPA Composite Worker) for soil and dry sediment at Load Line 12.

4.1.2 Wet Sediment

The wet sediment aggregates at Load Line 12 include the Active Area Channel, Former Settling Pond, and North of Active Area. These wet sediment aggregates are addressed in this PP and are described below.

Active Area Channel – The Active Area Channel flows west to east from Atlas Scrap Yard and Paris-Windham Road towards the Eastern Soil aggregate, immediately south of former Building 904, and intersects the primary north-south Main Ditch between the locations of former Buildings 900 and 901.

The Main Ditch (remediated in June 2010) drains north into the Active Area Channel at the western boundary of the Eastern Soil aggregate, at which point the Active Area Channel flows north towards the North of Active Area.

A 3.7-acre wetland is adjacent to and south of the Active Area Channel. This wetland is identified as Wetland 2 in the Phase III RI Report.

Former Settling Pond – The Former Settling Pond is a large, constructed basin located adjacent to the Active Area Channel. The Former Settling Pond was originally part of the Active Area Channel aggregate in the Phase II RI Report (USACE 2004); however, the Phase III RI Report established and evaluated this pond as its own unique aggregate.

The pond is approximately 150 ft east of the footprint for former Building 904, slightly curved, and approximately 250 ft long and 50 ft wide. Surface water within the Former Settling Pond originates from the Active Area Channel and surface water runoff from the former Load Line 12 process area north of the Active Area Channel. Surface water enters the Former Settling Pond from the Active Area Channel via a ditch and storm water runoff. Surface water eventually discharges from the Former Settling Pond into the Active Area Channel via an overflow pipe.

North of Active Area – The North of Active Area aggregate is north of the Load Line 12 fence line and north of Newton Falls Road. The aggregate receives surface water that exits the AOC from the Active Area Channel. The North of Active Area aggregate consists of two streams surrounded by wetlands that ultimately discharge into the Backwater Area aggregate of the Upper and Lower Cobbs Ponds AOC. In recent years, a beaver colony has constructed dams north of Load Line 12. These dams restrict surface water drainage from Load Line 12, and stagnant water often resides within the Main Ditch, Former Settling Pond, and Active Area Channel.

An 8.8-acre wetland is immediately adjacent to and surrounds the North of Active Area aggregate. This wetland is identified as Wetland 1 in the Phase III RI Report and receives surface water runoff from areas north of Load Line 12 and east of Paris-Windham Road.

4.1.3 Surface Water

Surface water at Load Line 12 is present perennially within the Active Area Channel and Former Settling Pond. The series of constructed channels within Load Line 12 convey drainage from within Load Line 12 towards the North of Active Area. Because the water is contiguous, surface water from Load Line 12 was assessed as one exposure unit.

4.2 Potential Contaminants

The 1978 Installation Assessment identified the major contaminants of the former RVAAP to be TNT, composition B [a combination of TNT and hexahydro-1,3,5-trinitro-1,3,5triazine (RDX)], sulfates, nitrates, lead styphnate, and lead azide (USATHAMA 1978).

Potential site-specific contaminants at Load Line 12, based on operation history, include TNT, ammonium nitrate, and heavy metals (lead, chromium, mercury, and arsenic) from munitions assembly activities. Other potential contaminants at Load Line 12 include volatile organic compounds (VOCs) from the aboveground heating oil tanks.

5.0 REMEDIAL INVESTIGATIONS

The AOC characteristics, nature and extent of contamination, and conceptual site model are based on investigations conducted from 1978–2010.

The following environmental investigations have been conducted at Load Line 12:

- Installation Assessment (USATHAMA 1978);
- RCRA Facility Assessment (Jacobs 1989);
- RVAAP Preliminary Assessment (USACE 1996);

- Relative Risk Site Evaluation (USACHPPM 1996);
- Phase I RI (USACE 1996);
- Phase II RI (USACE 2004); and
- 2008 Performance-based Acquisition (PBA08) RI, as summarized in the Phase III RI Report (USACE 2017a).

Wet sediment and surface water sampling locations are presented on Figure 5.

5.1 Wet Sediment

Wet sediment was evaluated from three areas based on former process operations and drainage areas within Load Line 12: the Active Area Channel, Former Settling Pond, and North of Active Area. Wet sediment samples were collected from site drainage ditches and the settling pond. The results of the samples taken are summarized below.

Active Area Channel -

- All concentrations of explosives, propellants, VOCs, pesticides, or polychlorinated biphenyls (PCBs) were below a target risk (TR) of 1E-05, hazard quotient (HQ) of 1.
- The three inorganic chemicals detected at concentrations that exceeded screening levels (SLs) and respective background concentrations were cyanide and silver at sample location L12-213 and arsenic at sample location L12sd-311. However, because these chemicals were only slightly above their conservative Unrestricted (Resident) Land Use facility-wide cleanup goals (FWCUGs), these metals were not identified as chemicals of concern (COCs) for potential remediation.
- None of the wet sediment samples had semi-volatile organic compound concentrations greater than their respective Resident Receptor (Adult and Child) FWCUG at a TR of 1E-05, HQ of 1 with the exception of one polycyclic aromatic hydrocarbon (PAH) [benzo(a)pyrene] at sample location L12sd-308. The benzo(a)pyrene concentration was 0.41

mg/kg, compared to the Resident Receptor FWCUG of 0.221 mg/kg. Sample location L12sd-308 is upstream of Load Line 12 and immediately adjacent to Paris-Windham Road which could be a source of PAH contamination. Additionally, this sample location is immediately downstream of Atlas Scrap Yard. Atlas Scrap Yard is expected to be remediated for PAH contamination as part of the CERCLA process.

Former Settling Pond -

• No explosives, propellants, inorganic chemicals, semi-volatile organic compounds, VOCs, pesticides, or PCBs were detected in wet sediment at a concentration that exceeded a TR of 1E-05, HQ of 1.

North of Active Area -

- No explosives, propellants, inorganic chemicals, VOCs, pesticides, or PCBs were detected in wet sediment at a concentration that exceeded a TR of 1E-05, HQ of 1.
- Only benzo(a)pyrene at L12sd-306 exceeded the FWCUG at a TR of 1E-05. HO of 1. The benzo(a)pyrene concentration was 0.24 mg/kg, compared to the Resident Receptor FWCUG of 0.221 mg/kg. This slight exceedance can be attributed to the fact that sample location L12sd-306 is immediately adjacent to and downstream of Newton Falls Road.

5.2 Surface Water

Surface water samples were collected from site drainage ditches and the settling pond. Surface water from Load Line 12 was assessed as one exposure unit. The results of the samples collected are summarized below:

- No explosives, propellants, VOCs, or PCBs were detected in surface water at a concentration that exceeded a TR of 1E-05, HQ of 1.
- Cobalt and lead were the only inorganic chemicals in surface water identified as COCs. These chemicals were identified as COCs because no FWCUGs are available for these metals. However, a conservative assessment shows 11 of 14 samples were below the tap water regional SL for cobalt (0.006 mg/L) and the U.S. Environmental Protection Agency health advisory level for drinking water for lead (0.015 mg/L). Cobalt and lead were not identified as COCs requiring remediation.
- PAHs Four [benz(a)anthracene. benzo(a)pyrene, benzo(b)fluoranthene, and bis(2-ethyhexly)phthalate] were detected at concentrations that exceeded Resident Receptor FWCUGs at a TR of 1E-05, HO of 1. The sample locations (L12sw-308 and L12sw-306) for these slight exceedances were immediately adjacent to and downstream of the neighboring roads. These PAHs were not identified as COCs requiring remediation.
- One pesticide (deltahexachlorocyclohexane) was detected without any screening criteria.

5.3 Impacts to Groundwater

The potential for wet sediment contaminants to impact groundwater was evaluated in a fate and transport evaluation presented in the Phase III RI Report (USACE 2017a). The fate and transport evaluation included the analysis of leaching and migration from wet sediment to groundwater. The modeling evaluated the potential for contaminants to leach from wet sediment and impact groundwater beneath the AOC.

Evaluation of modeling results with respect to current AOC groundwater data and model limitations indicates that identified wet sediment site-related contaminants are not currently influencing groundwater beneath the source areas, and that predicted future impacts would be mitigated by factors such as chemical and biological degradation and lateral dispersivity. Based on the fate and transport evaluation, no contaminant migration COCs for wet sediment were identified as impacting groundwater. The groundwater will be further evaluated under the Facility-wide Groundwater Monitoring Program (FWGWMP).

6.0 SCOPE AND ROLE OF RESPONSE ACTION

An evaluation using Resident Receptor (Adult and Child) FWCUGs was used to provide an Unrestricted (Residential) Land Use evaluation. Unrestricted (Residential) Land Use is considered protective for all categories of Land Use at Camp Ravenna, such as Military Training and Commercial/Industrial Land Use. Additional human health receptors associated with Camp Ravenna are the National Guard Trainee and Industrial Receptor.

Groundwater will be addressed under the RVAAP Facility-wide Groundwater AOC (RVAAP-66) as a separate decision. However, the selected remedy for wet sediment and surface water at Load Line 12 is protective of groundwater.

7.0 SUMMARY OF HUMAN AND ECOLOGICAL RISKS

7.1 Human Health Risk Assessment

Using information presented in Section 5.0, an HHRA was performed to identify COCs and provide a risk management evaluation to determine if remediation is required under CERCLA based on potential risks to human receptors.

The media evaluated in the HHRA for the Resident Receptor (Adult and Child) were wet sediment from three units (the Active Area Channel, Former Settling Pond, and North of Active Area) and surface water as a single unit for the entire AOC.

While COCs were identified in wet sediment and surface water, such as metals and PAHs in the Active Area Channel and benzo(a)pyrene in the North of Active Area, the evaluation in the Phase III RI Report indicated that no COCs required remediation for any media of concern for the Resident Receptor. Therefore, the site is protective for Unrestricted (Residential) Land Use. Because the site is protective for Unrestricted (Residential) Land Use, it is also protective for Commercial/Industrial Land Use and Military Training Land Use.

7.2 Ecological Risk Assessment

The ecological habitat at Load Line 12 consists of approximately 1.6 acres of aquatic habitat, including the Active Area Channel (0.43 acres), Former Settling Pond (0.26 acres), and North of Active Area (0.88 acres). Surface water flows into a series of drainage ditches that converge to drain into Upper and Lower Cobbs Ponds in the northeast corner of the AOC; this is sufficient to maintain aquatic habitat.

The northern long-eared bat (*Myotis* septentrionalis; federally threatened) exists at Camp Ravenna. There are no other federally listed species or critical habitats on Camp Ravenna. Load Line 12 has not been previously surveyed for federal- or state-listed species; however, there have been no documented sightings of state-listed, federally listed, threatened, or endangered species at the AOC (OHARNG 2014).

The Level I Scoping Ecological Risk Assessment (ERA) presents the important and significant ecological resources on the AOC and evaluates the potential for current contamination to impact ecological resources. This contamination was identified using historical and PBA08 RI data. Ecological resources at Load Line 12 were compared to the list of important ecological places and resources. Based on the 39 criteria defining important places and resources as identified by the Army and Ohio EPA, Wetlands 1 and 2 (shown on Figure 6) and surface water are important and significant ecological resources (because contamination is at or near the important resources) at Load Line 12 (USACE 2017a). These findings invoked a requirement of a Level II ERA. The Level II ERA incorporated available data to identify integrated chemicals of potential ecological concern (COPECs). A total of 54 integrated COPECs were identified for wet sediment; 14 integrated COPECs were identified for surface water.

The wet sediment and surface water COPECs were further evaluated with technical and refinement factors agreed upon by the Army and Ohio EPA. The results concluded that there are no chemicals requiring remediation or further evaluation to be protective of the environment. Per the *Guidance for Conducting Ecological Risk Assessments* (Ohio EPA 2008), there was sufficient justification to recommend no further action to be protective of ecological receptors at Load Line 12.

8.0 CONCLUSIONS

The HHRA determined that no remediation is required to be protective for the Resident Receptor (Adult and Child). The ERA concluded that no chemicals require remediation or further evaluation to protect the environment. The fate and transport assessment determined chemicals in wet sediment will not impact groundwater. Groundwater will be further evaluated under the FWGWMP. Accordingly, the Army, in coordination with Ohio EPA, is recommending no further action to attain Unrestricted (Residential) Land Use for wet sediment and surface water at Load Line 12.

This recommendation is not a final decision. The Army, in coordination with Ohio EPA, will select the remedy for Load Line 12 after reviewing and considering all comments submitted during the 30-day public comment period.

9.0 COMMUNITY PARTICIPATION

9.1 Community Participation

Public participation is an important component of the remedy selection. The Army, in coordination with Ohio EPA, is soliciting input from the community on the preferred alternative.

The comment period extends from June 6, 2018 to July 6, 2018. This period includes a public meeting at which the Army will present this PP. The Army will accept oral and written comments at this meeting.

9.2 Public Comment Period

The 30-day comment period is from June 6, 2018 to July 6, 2018, and provides an opportunity for public involvement in the decision-making process for the proposed action. The public is encouraged to review and comment on this PP.

All public comments will be considered by the Army and Ohio EPA before selecting a remedy. During the comment period, the public is encouraged to review documents pertinent to Load Line 12.

This information is available at the Information Repository and online at www.rvaap.org. To obtain further information, contact Kathryn Tait of the Camp Ravenna Environmental Office at kathryn.s.tait.nfg@mail.mil.

9.3 Written Comments

If the public would like to comment in writing on this PP, please deliver comments to the Army at the public meeting or mail written comments (postmarked no later than July 6, 2018).

POINT OF CONTACT FOR WRITTEN COMMENTS

Mailing Address: Camp Ravenna Joint Military Training Center Environmental Office Attn: Kathryn Tait 1438 State Route 534 SW Newton Falls, Ohio 44444

E-mail Address: kathryn.s.tait.nfg@mail.mil

9.4 Public Meeting

The Army will hold an open house and public meeting on this PP on June 21, 2018, at 6:00 PM, in the Shearer Community Center, 9355 Newton Falls Road Ravenna, Ohio 44266 to accept comments.

This meeting will provide an opportunity for the public to comment on the proposed action. Comments made at the meeting will be transcribed.

9.5 Army Review of Public Comments

The Army will review the public's comments as part of the process in reaching a final decision for the most appropriate action to be taken.

The Responsiveness Summary, a document that summarizes the Army's responses to comments received during the public comment period, will be included in the ROD. The Army's final choice of action will be documented in the ROD.

The ROD will be added to the RVAAP Restoration Program Administrative Record and Information Repositories.

INFORMATION REPOSITORIES

Reed Memorial Library

167 East Main Street Ravenna, Ohio 44266 (330) 296-2827

Hours of operation: 9AM-9PM Monday-Thursday 9AM-6PM Friday 9AM-5PM Saturday 1PM-5PM Sunday

Newton Falls Public Library 204 South Canal Street Newton Falls, Ohio 44444 (330) 872-1282

Hours of operation: 9AM-8PM Monday-Thursday 9AM-5PM Friday and Saturday

Online

http://www.rvaap.org/

ADMINISTRATIVE RECORD FILE

Camp Ravenna Joint Military Training
Center (former Ravenna Army
Ammunition Plant)Environmental Office1438 State Route 534 SWNewton Falls, Ohio 44444(614) 336-6136Note: Access is restricted to Camp Ravenna,
but the file can be obtained or viewed with
prior notice to Camp Ravenna.

GLOSSARY OF TERMS

Administrative Record: a collection of typically documents, reports and correspondence, generated during site investigation and remedial activities. Information in the Administrative Record represents the information used to select the preferred alternative.

Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**): a federal law passed in 1980, commonly referred to as the Superfund Program. It provides liability, compensation, cleanup, and emergency response in connection with the cleanup of inactive hazardous substance release sites that endanger public health or the environment.

Contaminant Migration Chemical of Concern (CMCOC): a chemical substance specific to an area of concern (AOC) that potentially poses significant potential to leach to groundwater at a concentration above human health risks goals. CMCOCs are typically further evaluated for remedial action.

Chemical of Concern (COC): a chemical substance specific to an AOC that potentially poses significant human health or ecological risks. COCs are typically further evaluated for remedial action.

Chemical of Potential Concern (COPC): a chemical substance specific to an AOC that potentially poses human health risks and requires further evaluation in the remedial investigation (RI). COPCs are typically not evaluated for remedial action.

Chemical of Potential Ecological Concern (**COPEC**): a chemical substance specific to an AOC that potentially poses ecological risks and requires further evaluation in the RI. COPECs are typically not evaluated for remedial action.

Ecological Receptor: a plant, animal, or habitat exposed to an adverse condition.

Human Receptor: a hypothetical person, based on current or potential future land use, who may be exposed to an adverse condition. For example, the National Guard Trainee is considered the hypothetical person when evaluating Military Training Land Use at the former Ravenna Army Ammunition Plant (RVAAP). **National Oil and Hazardous Substances Pollution Contingency Plan (NCP):** the set of regulations that implement CERCLA and address responses to hazardous substances and pollutants or contaminants.

Record of Decision (ROD): a signed legal record that describes the cleanup action or remedy selected for a site, the basis for selecting that remedy, public comments, and responses to comments.

Remedial Investigation (RI): CERCLA investigation that involves sampling environmental media, such as air, soil, and water, to determine the nature and extent of contamination and to calculate human health and environmental risks that result from the contamination.

Responsiveness Summary: a section of the ROD that documents and responds to written and oral comments received from the public about the Proposed Plan.

Risk Assessment: an evaluation that determines potential harmful effects, or lack thereof, posed to human health and the environment due to exposure to chemicals found at a CERCLA site.

Target Risk: the Ohio Environmental Protection Agency (2009) identifies 1E-05 as a target for cancer risk for carcinogens and an acceptable target hazard quotient of 1 for non-carcinogens.

Unrestricted (Residential) Land Use: defined for the former RVAAP restoration that is considered protective for all three Land Uses at Camp Ravenna Joint Military Training Center (Camp Ravenna). If an AOC meets the requirements for Unrestricted (Residential) Land Use, then the AOC can also be used for Military Training and Commercial/Industrial purposes.

REFERENCES

Jacobs (Jacobs Engineering Group, Inc.) 1989. RCRA Facility Assessment, Preliminary Review/ Visual Site Inspection Ravenna Army Ammunition Plant, Ravenna, Ohio. October 1989.

MKM (MKM Engineers, Inc.) 1999. Closure Report for Explosive Decontamination and Demolition of Selected Buildings at Load Line 12 through August 31, 1999. September 1999.

MKM 2000. Closure Report for Decontamination and Demolition of Load Line #12. June 2000.

OHARNG (Ohio Army National Guard) 2014. Integrated Natural Resources Management Plan at the Camp Ravenna Joint Military Training Center, Portage and Trumbull Counties, Ohio. December 2014.

Ohio EPA (Ohio Environmental Protection Agency) 2004. Director's Final Findings and Orders for the Ravenna Army Ammunition Plant. June 2004.

Ohio EPA 2008. *Guidance for Conducting Ecological Risk Assessments*. Division of Emergency and Remedial Response. April 2008.

USACE (U.S. Army Corps of Engineers) 1996. Preliminary Assessment for the Characterization of Areas of Contamination at the Ravenna Army Ammunition Plant, Ravenna, Ohio. February 1996.

USACE 2004. Phase II Remedial Investigation Report for Load Line 12 at the Ravenna Army Ammunition Plant, Ravenna, Ohio. March 2004.

USACE 2009. Record of Decision for Soil and Dry Sediment for the RVAAP-12 Load Line 12 at the Ravenna Army Ammunition Plan, Ravenna, Ohio. March 2009. USACE 2017a. Phase III Remedial Investigation Report for Wet Sediment Surface Water at RVAAP-12 Load Line 12, Former Ravenna Army Ammunition Plant Portage and Trumbull Counties, Ohio. February 2017.

USACE 2017b. Feasibility Study Addendum for Soil, Sediment, and Surface Water at RVAAP Load Lines 1, 2, 3, 4, and 12, Former Ravenna Army Ammunition Plant Portage and Trumbull Counties, Ohio. June 2017.

USACHPPM (U.S. Army Center for Health Promotion and Preventative Medicine) 1996. Hazardous and Medical Waste Study No. 37-EF-5360-97 Relative Risk Site Evaluation, Ravenna Army Ammunition Plant. November 1996.

USATHAMA (U.S. Army Toxic and Hazardous Materials Agency) 1978. Installation Assessment of Ravenna Army Ammunition Plant, Records Evaluation Report No. 132. November 1978. THIS PAGE INTENTIONALLY LEFT BLANK.

FIGURES

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Figure 1. General Location and Orientation of Camp Ravenna



Figure 2. Location of Load Line 12 at Camp Ravenna



Figure 3. Load Line 12 Site Features

Load Line 12



Figure 4. Load Line 12 Spatial Aggregates



Figure 5. Load Line 12 Wet Sediment and Surface Water Sample Locations



Figure 6. Aquatic Resources Inside and Near the Habitat Area at Load Line 12

ATTACHMENT A OHIO EPA COMMENTS

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John R. Kasich, Governor Mary Taylor, Lt. Governor Craig W. Butler, Director



November 1, 2017

Mr. Mark Leeper Army National Guard Directorate ARNGD-ILE Clean Up 111 South George Mason Arlington, VA 22203 Re: US Army Ravenna Ammunition Plt RVAAP Remediation Response Project records Remedial Response Portage County 267000859030

Subject: "Draft Proposed Plan for Wet Sediment and Surface Water at Load Line 12 for the Former Ravenna Army Ammunition Plant (RVAAP)" Document, (Work Activity No. 267-000859-030)

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) received the draft Proposed Plan for Wet Sediment and Surface Water at RVAAP-12 Load Line 12 on September 22, 2017.

We have no comments on the Draft Proposed Plan for Load Line 12 Wet Sediment and Surface Water.

Sincerely,

Sve Netzly-Watkins

SN-W/nvp

- cc: Craig Coombs, USACE, Louisville District Nat Peters, II, USACE Louisville District Katie Tait/Kevin Sedlak, Camp Ravenna, Newton Falls Shreffler/Harris, Camp Ravenna, Vista Sciences Corp, Newton Falls Jed Thomas, Leidos Pat Ryan, Leidos-REIMS
- ec: Rod Beals, Ohio EPA, NEDO, DERR Bill Damschroder, Legal Bob Princic, Ohio EPA, NEDO, DERR Brian Tucker, Ohio EPA, DERR, CO Tom Schneider, Ohio EPA, DERR, SWDO

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