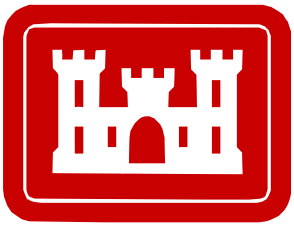
FINAL
REMEDIAL DESIGN

REMEDIAL ACTION AT RVAAP-50 – ATLAS SCRAP YARD
FORMER RAVENNA ARMY AMMUNITION PLANT
RESTORATION PROGRAM

CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

Prepared for



U.S. Army Corps of Engineers
Louisville District
P.O. Box 59
Louisville, KY 40201-0059

Contract No.: W912QR19D0056
Delivery Order No.: W912QR23F0015

Prepared by
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August 2024

REPORT DOCUMENTATION PAGE

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Tetra Tech

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8. PERFORMING ORGANIZATION REPORT NUMBER

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None

14. ABSTRACT

This Remedial Design (RD) describes the activities to implement the approved remedial activities for RVAAP-50 Atlas Scrap Yard described in the Record of Decision (Leidos, 2022) to achieve residential land use at the Former Incinerator Area (FIA) and industrial land use at the Former Storage Area (FSA). PIKA-Insight has developed this RD to comply with the Performance Work Statement, dated August 5, 2022, and revised September 7, 2022, for the removal of lead-impacted soil at the FIA and benzo(a) pyrene-impacted soil at the FSA.

15. SUBJECT TERMS

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Received October 10, 2024

October 9, 2024

TRANSMITTED ELECTRONICALLY

Mr. Kevin Sedlak
Restoration Program Manager
ARNG-ILE Clean Up
Camp James A Garfield JTC
1438 State Route 534 SW
Newton Falls, OH 44444

RE: US Army Ammunition Plt RVAAP
Remediation Response
Project Records
Remedial Response
Portage County
ID # 267000859110

Sent via email to: Kevin.m.sedlak.ctr@army.mil

Subject: **Former Ravenna Army Ammunition Plant**
Approval Final Remedial Design Remedial Action Work Plan from RVAAP-50 Atlas Scrap Yard
Ohio EPA Final Approval Letter

Dear Mr. Sedlak:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the "Final Remedial Action Work Plan, Removal Action" at the Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio (Camp James A. Garfield)[1]. This document was received at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) via email on September 6, 2024. The document was prepared for the United States Army Corps of Engineers (USACE) on behalf of the National Guard Bureau by PIKA-Insight.

The wetland mitigation plan will be provided as a separate document. Ohio EPA approves this work plan with the contingency that the wetland mitigation plan will be reviewed and approved separately.

The final document was reviewed by personnel from Ohio EPA's DERR. Pursuant to the Director's Findings and Orders paragraph 39 (b), Ohio EPA considers the document final and approved.

[1] http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=3195543

This letter is an official response from Ohio EPA that will be maintained as a public record. If you have any questions, please contact me at (330) 963-1109, or via email at craig.kowalski@epa.ohio.gov.

Sincerely,

Craig Kowalski

Craig Kowalski,
Site Coordinator
Division of Environmental Response and Revitalization

CK/cm

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Steve Kvaal, USACE Louisville
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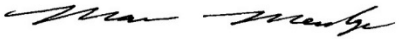
Tim Christman, Ohio EPA, CO, DERR
Brian Tucker, Ohio EPA, CO, DERR

CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

PIKA-Insight JV, has completed the preparation of this Remedial Design as part of the Remedial Action at RVAAP-50 – Atlas Scrap Yard at the Former Ravenna Army Ammunition Plant (RVAAP)/Camp James A. Garfield. 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 independent technical review included evaluation of data quality objectives; technical assumptions; methods, procedures, and material to be used in analyses; 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 USACE policy.



9/3/24

Marco Mendoza
Project Manager

Date

9/3/24

Signature
Independent Technical Reviewer

Date

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Camp James A. Garfield
Portage and Trumbull Counties, Ohio

Submitted to:
USACE Louisville District
P.O. Box 59
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Prepared by
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Stafford, TX 7747

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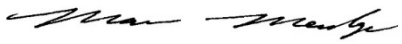
August 2024

PREPARED UNDER THE SUPERVISION OF
& APPROVED FOR SUBMITTAL BY:



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FINAL DOCUMENT DISTRIBUTION LIST

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ARNG	Army National Guard
DERR	Division of Environmental Response and Revitalization
NEDO	Northeast District Office
OHARNG	Ohio Army National Guard
OH EPA	Ohio Environmental Protection Agency
SWDO	Southwest District Office
USACE	United States Army Corps of Engineers

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABBREVIATIONS AND ACRONYMS

amsl	above mean sea level
AOC	Area of Concern
APP	Accident Prevention Plan
ARNG	Army National Guard
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CJAG	Camp James A. Garfield
COC	Contaminant of concern
CUG	Cleanup goal
DoD	Department of Defense
EFS	Environmental Field Services, Inc.
ESVT	Enhanced soil vapor thermal treatment
FIA	Former Incinerator Area
FS	Feasibility Study
FSA	Former Storage Area
GAC	granular activated carbon
gal	gallon
GEO	Good Earthkeeping Organization, Inc.
LUC	Land Use Control
mg/kg	milligrams per kilogram
mm	millimeter
MMRP	Military Munitions Response Program
OHARNG	Ohio Army National Guard
Ohio EPA	Ohio Environmental Protection Agency
PAH	polycyclic aromatic hydrocarbon
PIKA-Insight	PIKA-Insight Joint Venture, LLC
PM	project manager
PP	Proposed Plan

QA	Quality Assurance
QC	Quality Control
RA	remedial action
RACR	Remedial Action Completion Report
RAO	Remedial Action Objective
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RVAAP	Ravenna Army Ammunition Plant
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
Tetra Tech	Tetra Tech, Inc.
USACE	United States Army Corps of Engineers
XRF	X-Ray Fluorescence

1.0 INTRODUCTION

PIKA-Insight, Joint Venture (PIKA-Insight) has prepared this Remedial Design (RD) to describe the implementation process for the selected remedy for surface soil at the former Ravenna Army Ammunition Plant (RVAAP) site RVAAP-50 Atlas Scrap Yard, now known as Camp James A. Garfield, as stated in the Revised Final Record of Decision (ROD) (Leidos, 2022). This RD will serve as the Work Plan for the Remedial Actions (RAs) to be conducted in accordance with the approved ROD. This work is being performed in accordance with United States Army Corps of Engineers (USACE) Contract W912QR19D0056, Delivery Order W912QR23F0015.

1.1 PURPOSE

This RD describes the implementation of RAs at RVAAP-50 Atlas Scrap Yard area of concern (AOC) in accordance with the ROD (Leidos, 2022). A Remedial Investigation (RI) (Leidos, 2017) and Feasibility Study (FS) (Leidos, 2019) were previously completed for RVAAP-50. A Proposed Plan (PP) (Leidos, 2020) was published to receive input from the public on the selected approach. The Ohio Environmental Protection Agency (Ohio EPA), the supporting state regulatory agency, has concurred with the RI, FS, and PP. The Remedial Investigation/Feasibility Study identified two distinct areas requiring remediation: the Former Incinerator Area (FIA) and Former Storage Area (FSA). The intended land use for RVAAP-50 is Unrestricted Land Use at FIA and Commercial/Industrial Land Use at the FSA. Because the future land use will involve employees, the land must meet these applicable standards. This RD describes the implementation of former incinerator demolition, soil removal, and site restoration at the FIA, and soil removal with thermal treatment and replacement of soil at the FSA.

1.2 SCOPE

The scope of this RD is to present a plan to 1) implement the soil removal at the FIA, 2) demolish the remaining portion of the former incinerator at the FIA, 3) implement thermal treatment of polycyclic aromatic hydrocarbon (PAH)-impacted soil at the FSA, and 4) define land use controls (LUCs) that will be implemented after completing the RAs, and 5) collect a surface soil sample at former Building T-4704 to address a data gap for polychlorinated biphenyls (PCBs) analysis. Once these RAs have been completed, and the project remedial action objectives (RAOs) (discussed in

SECTION 4.1) are met, the site conditions will be considered protective of full-time workers, thereby meeting the requirements for Unrestricted Land Use at FIA and Commercial/Industrial Land Use at FSA.

2.0 FACILITY AND SITE DESCRIPTION

The following sections provide a description of the facility and site characteristics.

2.1 FACILITY DESCRIPTION AND HISTORY

The former RVAAP, now named Camp James A. Garfield (CJAG), is located in northeastern Ohio within Portage and Trumbull counties, approximately 1 mile northwest of the City of Newton Falls and 3 miles east-northeast of the City of Ravenna (FIGURE 2-1). The facility is a parcel of property approximately 11 miles long and 3.5 miles wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garrett, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east.

The former RVAAP was a load, assembly, and pack facility built to produce large caliber artillery projectiles and bombs. Administrative control of the facility (21,683 acres) has been transferred to the U.S. Property and Fiscal Officer for Ohio and subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a military training site. The RVAAP Installation Restoration Program, managed by the Army National Guard (ARNG) and the OHARNG, administers investigation and cleanup of past activities over the 21,683 acres of the former RVAAP. The Ohio EPA is the regulatory agency for the RVAAP restoration program.

2.2 SITE DESCRIPTION

The following sections present the site description and history and discuss previous activities at RVAAP-50.

2.2.1 Site Name, Location, and Description

Atlas Scrap Yard is a 73-acre AOC located southwest of the intersection of Newton Falls Road and Paris-Windham Road and north of Load Line 4 in the southeastern portion of CJAG as shown in FIGURE 2-2. The AOC boundary for Atlas Scrap Yard and locations of the FIA and FSA are presented in FIGURE 2-3.

The AOC boundary encompasses the FIA and FSA. The AOC is bound by Newton Falls Road to the north and Paris-Windham Road to the east. This area operated as a construction camp to house

workers and their families during construction of the facility. The incinerator in the FIA was utilized at the construction camp. By the end of World War II, the majority of buildings and structures at Atlas Scrap Yard were demolished or relocated to other areas of the facility. The brick structure associated with the incinerator is still present, but other components associated with the incinerator have been razed. The FIA is in a 57.6-acre wooded and undeveloped area and is not actively utilized for storage.

The FSA consists of approximately 14.9 acres and is located in the north central portion of the AOC. The FSA was used for stockpiling a variety of inert materials, including railroad ties, telephone poles, and concrete and brick. The FSA contained staging areas, multiple access roads, and parking areas made up of slag and asphalt gravel.

Additional features throughout the Atlas Scrap Yard include several one-lane gravel roads that enter the AOC from the north and east and small construction drainage ditches that border the access roads. The AOC is currently vegetated with shrub/scrub/tree vegetation in unpaved areas and is forested around its perimeter.

The location of the excavation within the FIA will be delineated as part of this RD as discussed in **SECTION 5.1.5**. The location of the excavation within the FSA is presented on **FIGURE 2-4**.

2.2.2 Site History

Atlas Scrap Yard, then known as the construction camp, was designed and utilized from 1940 to 1945 to house construction workers and their families. Following World War II through the 1950s, the AOC was used to support road and grounds maintenance activities. After the Vietnam War, RVAAP-50 had been used for storage and stockpiling.

The northcentral portion of RVAAP-50 is designated as the former storage area. This area was used as a stockpile storage area for bulk material, including gravel, railroad ballasts, sand, culvert pipe, railroad ties, and telephone poles. Sometime between 2000 and 2002, railroad ties and timbers were placed in the former storage area. In early 2017, activities were conducted to remove the railroad ties and timbers, as well as stockpiled concrete and asphalt. These activities included sampling the waste material and subsequent determination that the waste debris were determined

to be non-hazardous. Approximately 1,160 tons of stockpiled railroad ties and telephone poles and 1,655 tons of stockpiled concrete and asphalt were removed and disposed of off-site.

The southern portion of RVAAP-50 currently contains the remnants of a formerly used incinerator. The outside structure associated with the former incinerator is still present, but other components associated with the incinerator have been razed.

2.2.3 Topography

The topography of CJAG is gently undulating with an overall decrease in ground elevation from a topographic high of approximately 1,220 feet above mean sea level (amsl) in the far western portion of the facility to low areas at approximately 930 feet amsl in the far eastern portion. Ground elevations within the RVAAP-50 range from approximately 976 to 986 feet amsl. Topographic relief at RVAAP-50 is low, with a topographic high in the northwestern portion of the site that slopes downward to the topographic low in the central-eastern boundary. Surface water follows topographic relief and drains into roadside ditches along the eastern portion of the AOC.

2.2.4 Geology

Atlas Scrap Yard is located within the Hiram Till glacial deposit. The primary soil types found at RVAAP-50 are the Mahoning silt loam (2 to 6 percent slopes) and the Trumbull silt loam (0 to 2 percent slopes).

The Mahoning silt loam is a gently sloping, poorly-drained soil formed in silty clay loam or clay loam glacial till, generally where bedrock is greater than 6 feet below ground surface (bgs). The Mahoning silt loam has low permeability, with rapid runoff and seasonal wetness, and is present primarily in the central 60 percent of the site (United States Department of Agriculture, 2010). The Trumbull silt loam covers the remaining 40 percent of the AOC and is poorly-drained soil formed in silty clay till, generally where bedrock is greater than 6 feet bgs.

The Trumbull silt loam is typically formed in depressions with a moderate water capacity with groundwater existing near ground surface (United States Department of Agriculture, 2010). The

bedrock formation at the RVAAP-50 is the Pennsylvanian age Pottsville Formation, Sharon Sandstone member, informally referred to as the Sharon Conglomerate (Winslow & White, 1966).

The Sharon Sandstone Member, the lowest unit of the Pottsville Formation, is a highly porous, loosely cemented, permeable, cross-bedded, frequently fractured, and weathered orthoquartzite sandstone, which is locally conglomeratic. The Sharon Conglomerate exhibits locally occurring thin shale lenses in the upper portion of the unit.

During well installation activities, as part of the 2004 Characterization of 14 AOCs (MKM, 2007), bedrock was observed at RVAAP-50 at depths ranging between 20 to 29 feet bgs. Bedrock was not encountered in any of the 21 soil or geotechnical borings installed to a maximum depth of 13 feet bgs during the 2010 RI (Leidos, 2017).

2.2.5 Hydrogeology

Ten groundwater monitoring wells (ASYmw-001 to ASYmw-010) were installed at Atlas Scrap Yard during the characterization of 14 AOCs. The monitoring wells are screened in the unconsolidated monitoring zone and the screened interval amongst monitoring wells varies. The screened intervals for the monitoring wells on-site range between 9.5 feet bgs (relative minima) to 27 feet bgs (relative maxima).

In April 2019, water surface elevations at RVAAP-50 ranged from 968.7 to 973.73 feet amsl, with historical data showing large seasonal fluctuations in the general groundwater flow direction. The local potentiometric surface indicates groundwater within the AOC flows to the west-northwest with radial flow at the southern portion of the AOC. The average horizontal hydraulic gradient for the unconsolidated zone is approximately 0.0046 feet/foot.

2.3 PREVIOUS INVESTIGATIONS

In 1978, the U.S. Army Toxic and Hazardous Materials Agency conducted an Installation Assessment of the former RVAAP to review the potential for contaminant releases at multiple former operations areas, as documented in the Installation Assessment of Ravenna Army Ammunition Plant (U.S. Army Toxic and Hazardous Materials Agency, 1978). This report initially evaluated CJAG and began to prioritize the AOCs. Potential contaminants at RVAAP-

50, based on operational history, include metals, PCBs, explosives, semi-volatile organic compounds, and volatile organic compounds. These chemical groups are associated with stockpile storage and roads/grounds equipment storage and maintenance (Leidos, 2017). In addition, RVAAP-50 was previously evaluated as a Munitions Response Site under the Military Munitions Response Program (MMRP), as there was a suspected burial area containing 40-millimeter (mm) fragments and casings that was located near the central portion of RVAAP-50. Munitions were not encountered at the site during the MMRP RI; therefore, the No Further Action ROD for RVAAP-050-R-01 concluded that explosive safety hazards associated with munitions were not present and there was no risk from munition constituent-related contamination. RVAAP-50 has been included in various historical assessments and investigations conducted at the former RVAAP. The following environmental investigations have been completed for RVAAP-50:

- Relative Risk Site Evaluation for Newly Added Sites (U.S. Army Center for Health Promotion and Preventive Medicine, 1998),
- 2004/2005 Characterization of 14 AOCs (MKM, 2007),
- 2010 RI, and
- 2011 Supplemental Sampling.

The results from these investigations were used to evaluate the nature and extent of contamination, assess potential future impacts to groundwater, conduct human health risk assessments and ecological risk assessments, and evaluate the need for remedial alternatives, as summarized in the RVAAP-50 FS Report (Leidos, 2019).

2.4 FUTURE LAND USE

Atlas Scrap Yard is currently managed by ARNG/OHARNG. The potential future uses for Atlas Scrap Yard are Unrestricted Land Use at the FIA and Commercial/Industrial Land Use at the FSA. The representative receptors corresponding to these potential future uses are the National Guard Trainee and Industrial Receptor.

3.0 PROJECT ORGANIZATION AND COORDINATION

The following section describes the authority and responsibility of the project team for PIKA-Insight and Tetra Tech, Inc's (Tetra Tech) operations at CJAG. Personnel from PIKA-Insight and Tetra Tech were selected based on qualifications, previous experience, and training. The project team will provide the specific technical and management capabilities and qualifications to perform the contract work.

On behalf of PIKA-Insight, Tetra Tech will prepare deliverables, oversee field activities, and assist in coordinating subcontractors. Deliverables will be reviewed by Tetra Tech prior to undergoing independent technical review by PIKA-Insight. The status of field activities will be communicated to PIKA-Insight at regular intervals to aid with scheduling and avoid miscommunications. Documentation standards will be agreed upon by both Tetra Tech and PIKA-Insight prior to implementation during field activities.

Project staff members will be qualified to perform their assigned tasks in accordance with terms outlined in the Performance Work Statement and the Quality Control Plan. Verification of personnel qualifications will be documented.

3.1 USACE CONTRACTING OFFICER'S REPRESENTATIVE

Nat Peters will serve as the USACE Contracting Officer's Representative with duties including overseeing PIKA-Insight to make sure work is completed in accordance with this RD Work Plan. The USACE Contracting Officer's Representative also coordinates responses for any unexpected materials encountered.

3.2 ARNG PROJECT MANAGER AND OHARNG RESTORATION REPRESENTATIVE

National Guard representatives include Kevin Sedlak (ARNG Restoration Representative) and Katie Tait (OHARNG Restoration Representative). Ms. Tait will be responsible for signing waste profiles and manifests, waste management, assisting with project coordination and access, and document review. Mr. Sedlak will provide overall coordination support, review of field activities, and document review.

3.3 OHIO ENVIRONMENTAL PROTECTION AGENCY

The Ohio EPA is the regulatory agency for this project. Ohio EPA will review project documents and make sure that the RD/RA are completed in accordance with the RD Work Plan and regulatory requirements.

3.4 CONTRACTOR PROJECT MANAGER

Marco Mendoza, PG, will serve as the Project Manager (PM) and is the person in charge of the overall project and has full authority for coordination and direction of the project. The PM will be assisted by the on-site personnel. The PM will communicate with the USACE and ARNG/OHARNG. Specific responsibilities of the PM are as follows:

- Manage and execute overall scope, budget, and schedule.
- Interpret and plan overall work effort.
- Oversee preparation and planning of documents for the work.
- Respond to resource requirements by defining resource needs and securing the commitments for staff and equipment.
- Communicate with the Field Superintendent regarding day-to-day activities and alert the appropriate personnel to potential problems.
- Monitor subcontractor performance, schedules, budgets, and invoices.
- Develop, review, and meet work schedule and budget objectives.
- Assess technical adequacy of field, laboratory, data management, and construction activities.
- Manage and coordinate group interfaces.
- Document the need for contract modifications, if needed.

The PM may delegate portions of the responsibilities to the Field Superintendent who is assigned to be on-site for the duration of the project.

3.5 CONTRACTOR FIELD SUPERINTENDENT

The Field Superintendent will be provided by Tetra Tech and is responsible for making sure that the resources of the project team are dedicated to executing the field phases of the project, overseeing removal action, and site restoration activities. The Field Superintendent is responsible

for on-site client coordination relating to the details of the project and activities of the project team. He/she will assist the PM in maintaining sufficient resource allocations to meet the project schedule and budget and provides daily reports to the PM on progress of the project. The Field Superintendent will be responsible for documenting activities and directly communicating with subcontractors performing the field work. He/she will not make decisions that deviate from established plans without first receiving approval from PIKA-Insight and, if necessary, the Army stakeholders. The Field Superintendent will have knowledge of specific construction practices relating to earthwork, regulations, observation and testing procedures, and documentation procedures.

The responsibilities of the Field Superintendent include:

- Regularly reviewing the project RD for RVAAP-50;
- Monitoring work progress and adherence to project requirements for task completion;
- Conducting or delegating inspections to verify spill equipment is maintained and no spills have occurred (daily) and dust generation is minimized;
- Administering the Quality Assurance (QA)/Quality Control (QC) program, reporting inspection and certifications to the Project QC Manager;
- Providing logistical support for field operations;
- Interfacing with the subcontractors;
- Conducting on-site status meetings on a weekly basis;
- Assisting in preparing required submittals;
- Providing integration of subcontractor services to provide optimum support;
- Liaison with project staff and subcontractors as well as the on-site client representative;
- Preparation of daily reports;
- Conduct stormwater inspections and equipment and truck inspections; and
- Notifying the PM if conflicts arise with the proposed schedule.

3.6 CONTRACTOR HEALTH AND SAFETY MANAGER

The Project Health and Safety Manager, Maureen Sassoon, Certified Industrial Hygienist, will be responsible for:

- Preparing the Accident Prevention Plan (APP)/Site Safety and Health Plan (SSHP) (**APPENDIX A**) in compliance with USACE EM 385-1-1, Occupational Safety and Health Administration standards 29 Code of Federal Regulations 1910.120 and 1926.65, and Engineering Regulations for Hazardous Toxic and Radiological Waste Sites, ER 385-1-92. The APP/SSHP will also comply with the Facility-wide Safety and Health Plan for Environmental Investigations.
- Implementing the Health and Safety Program and APP/SSHP;
- Reviewing project-specific health and safety plans;
- Implementing corrective measures for health and safety deficiencies; and
- Making sure required training and medical monitoring of personnel is conducted.

The Project Health and Safety Manager has the authority to require corrective measures related to health and safety issues and to stop work if required, to ensure a safe working environment.

3.7 SITE SAFETY AND HEALTH OFFICER

The Site Safety and Health Officer (SSHO) will be responsible for the implementation of and adherence to the APP/SSHP. The SSHO will verify and approve that specified health and safety procedures outlined in the APP/SSHP adequately protect on-site personnel during field activities. The SSHO will make sure that health and safety procedures are modified to meet changing needs, if required, and monitor project compliance with project-specific health and safety plans. The SSHO will also make sure that personnel working on-site during remedial actions are trained in the handling of hazardous materials. The SSHO will also make sure that on-site personnel (including visitors) strictly adhere to the APP/SSHP throughout field activities conducted for the duration of the project. The SSHO will report to the Contractor PM and will inform the Field Superintendent of information and decisions reported. The SSHO also has stop work authority if unsafe working conditions arise during field activities.

3.8 SUBCONTRACTOR CONSTRUCTION SUPERVISOR

The Subcontractor Construction Supervisor, if a subcontractor is used, will implement specific contracted components of this RD. The Subcontractor Construction Supervisor will be responsible for properly performing specified remedial activities in accordance with this RD, adhering to

QA/QC field procedures and the QC Plan, implementing the APP/SSHP, coordinating field personnel activities, and documenting field activities. Each Subcontractor Construction Supervisor will report directly to the Contractor Field Superintendent.

3.9 SUBCONTRACTORS

PIKA-Insight will be subcontracting service providers for excavation, surveying, laboratory analytical services, thermal treatment at the FSA, and disposal of soil from the FIA. The following sections provide the names of the subcontractors and a brief description of their responsibilities.

3.9.1 Excavation

Environmental Field Services, Inc. (EFS) will be providing materials, equipment, and labor personnel to support the RA. Materials will include erosion and sediment controls, containment supplies, decontamination tools, seed mixes, and backfill. Equipment will include a hydraulic excavator, a skid-steer (as necessary), and any other equipment necessary to facilitate the demolition of the former incinerator, soil excavation, and site restoration.

3.9.2 Thermal Treatment

Good Earthkeeping Organization, Inc. (GEO) Environmental Remediation Company will provide thermal treatment services for the soil to be treated at the FSA. GEO personnel will perform the construction, operation, and performance sampling of the thermal desorption system.

3.9.3 Surveyor

Campbell & Associates, a licensed Ohio surveyor, will provide surveying services including the location of excavation boundaries at the FIA and FSA, confirmation of excavation depth and calculation of total quantity removed, and verification of restoration to original grade.

3.9.4 Laboratory Services

ALS – Middletown in Middletown, PA, will provide fixed-base laboratory analytical services for the removal action including analysis of characterization and confirmation soil samples. Intertek-PSI, Inc. will provide laboratory services for characterization of potential asbestos-containing materials associated with the incinerator structure. ALS possesses DoD Environmental Laboratory

Accreditation Program certification, and Intertek-PSI possesses American Industrial Hygiene Association Laboratory Accreditation Program certification as provided in **APPENDIX B**.

3.9.5 Waste Transportation and Disposal Services

Waste derived from excavation activities will be loaded into lined haul trucks and will have the required labeling and licensing accordance with applicable federal, state, and local rules, laws, and regulations. Before transport off-site, haul trucks will be manifested and inspected for proper marking and labeling information. A returned signed copy of each manifest provided by the disposal facility will be retained by the generator and the Contractor for record keeping purposes.

Federal DOT regulations will be followed during transport activities. The soil will be DOT-classified based on direct sample results or on previously collected data. The DOT labeling requirements will be followed; and all appropriate placards, bill of lading, and letter of approval requirements to transport contaminated soil from CJAG will be in place.

American Waste Management will be provisioning haul trucks and coordinating disposal with the landfill. The haul trucks will be provided by a DLA-approved hauler as listed on the Qualified Transporters List.

Soil contaminated with lead at the FIA is anticipated to be classified as hazardous for disposal purposes. Soil will be characterized prior to excavation to confirm status. Should the generation of hazardous waste at this facility cause OHARNG to become classified as a Large Quantity Generator, requirements for Large Quantity Generator's will be followed during the handling and disposal of the waste. This includes training in the handling of hazardous waste for all work personnel, notifications to the Ohio EPA prior to the generation of the waste, and timeframes for the generation and disposal of the waste. Hazardous waste will be disposed of at one of the three hazardous waste landfills shown in **TABLE 3-1** depending on availability. If FIA waste is classified as non-hazardous, the waste will be disposed of at the location identified in **TABLE 3-2**. Waste disposal facility permits and licenses are provided in **APPENDIX C.**

Table 3-1. Hazardous Waste Disposal Facility Details

TSDF EPA/HWD ID	Facility Name	Address	City	State	Zip
MID000724831	Michigan Disposal Waste Treatment Plant	49350 N I-94 Service Dr	Belleville	MI	48111
OHD980568992	Envirite Of Ohio	2050 Central Ave SE	Canton	OH	44707
PAD004835146	Max Environmental Technologies	233 Max Lane	Yukon	PA	15698

Incidental waste generated during excavation and thermal treatment activities (including liquid wastes) will be considered non-hazardous. Soil at the FSA will be thermally treated and replaced; thus, soil will not be a primary waste stream at the FSA. Other residual waste generated during remedial activities will be profiled prior to disposal. Non-hazardous waste will be disposed of at the landfill shown in **TABLE 3-2** below.

Table 3-2. Non-Hazardous Waste Disposal Facility Details

Permits To Install	Facility Name	Address	City	State	Zip
02-5875, 02-12954	Waste Management American Landfill	7916 Chapel St.	Waynesburg	OH	44688

Wastes and recyclables (such as the treated soil at the FSA, etc.) will be tracked on the project field forms included in **APPENDIX D** (Waste Disposal Tracker, Waste Inspection and Inventory Sheet, and Waste Manifest Log).

4.0 PROJECT APPROACH

4.1 OBJECTIVES

The RAO for Atlas Scrap Yard is to prevent exposure to 1) surface soil (0 to 1 foot bgs) with concentrations of lead above 200 milligrams per kilogram (mg/kg) at the FIA; and 2) surface soil (0 to 1 foot bgs) with concentrations of PAHs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenzo(a,h)anthracene above cleanup goals (CUGs) at the FSA. The RAO references CUGs and risk levels that are considered protective of human health under current and future use scenarios.

FIGURES 4-1 AND 4-2 present the representative samples and estimated extent of surface soil (0 to 1 foot bgs) requiring remediation at the FIA and FSA, respectively. Details regarding the confirmation sampling at both the FSA and the FIA are discussed in Section 5.6.3. Delineation sampling at the FIA will most likely change the boundaries of the excavation as described in **SECTION 5.1.5**. **TABLE 4-1** presents the remedial CUGs for PAHs at the FSA. Following completion of the RAOs, the achieved CUGs will allow for Unrestricted Land Use at the FIA and Commercial/Industrial Land Use at the FSA.

Table 4-1. Former Storage Area PAH Cleanup Goals

Chemicals of Concern	Maximum Surface Soil Concentration	Resident Receptor	Industrial Receptor
Benz(a)anthracene	51J	11	210
Benzo(a)pyrene	50J	1.1	21
Benzo(b)fluoranthene	56J	11	210
Benzo(k)fluoranthene	37J	110	2100
Dibenz(a,h)anthracene	7.7J	1.1	21

Concentrations are provided in milligrams per kilogram.
The Resident Receptor CUGs for PAHs are based on the USEPA Resident Soil RSL at TR of 1E-05, dated June 2017. The Industrial Receptor CUGs for PAHs are based on the USEPA Composite Worker Soil RSL at TR of 1E-05, dated June 2017. Only one sample location (ASYss-126M) had an exceedance of a PAH Industrial Receptor cleanup goal.
J = Analyte detected at the estimated concentration
PAH = Polycyclic Aromatic hydrocarbon
RSL = Regional Screening Level
USEPA = U.S. Environmental Protection Agency

4.2 OVERVIEW OF FIELD EFFORT

Soil will be excavated at RVAAP-50 from two separate locations: the FIA and FSA. Excavated soil at the FIA will be disposed of at an approved off-site landfill, while excavated soil at the FSA

will be treated by ex-situ thermal treatment prior to being replaced as backfill. Work will be conducted in accordance with the project plans (RD and APP/SSHP). The estimated removal base quantities are 366 loose cubic yards of lead-contaminated soil at the FIA and 473 loose cubic yards at the FSA for treatment of PAH-contaminated soil. Wastes and recyclables will be monitored throughout the duration of the project.

In order to accomplish the RAs described above and in accordance with the ROD, the following additional activities will be performed:

- Confirmation of underground utilities in the excavation area will be performed by a third party locate service.
- Establishment of initial grades (prior to excavation), final excavation depths, and horizontal extents by an Ohio-licensed surveyor.
- Identification of wetlands and streams.
- Removal of trees in the excavation area in accordance with the Tree Removal Plan in **APPENDIX E**.
- Delineation of the extent of lead-contaminated soil at the FIA to 200 mg/kg.
- Characterization sampling of the former incinerator debris and structure, lead-contaminated soil prior to excavation at the FIA, and the borrow material.
- Installation of erosion and sediment controls.
- Demolition of the former incinerator at the FIA.
- Excavation and transportation of the lead-contaminated soil (estimated 366 cubic yards in-situ) at the FIA to an approved landfill.
- Waste tracking and disposal of lead-contaminated soil and debris from the FIA.
- Excavation of the PAH-contaminated soil (estimated 473 cubic yards in-situ) at the FSA and construction of an ex-situ thermal treatment system at the FSA.
- Ex-situ thermal treatment of soil with enhanced soil vapor treatment at the FSA.
- Performance sampling of treated soil at the FSA.
- Confirmation soil sampling at the FIA and FSA.
- Backfilling with clean borrow at the FIA.

- Replacement of treated soil as backfill at the FSA.
- Restoration of impacted areas via reseeding as appropriate.
- Collect one soil sample at former Building T-4704 to address a data gap for PCB analysis.
- Equipment decontamination and demobilization.

5.0 DESCRIPTION OF ACTIVITIES

5.1 PREMOBILIZATION

Prior to mobilization, the following plans will be submitted for approval:

- Tree Removal Plan (**APPENDIX E**)
- Remedial Design
- APP/SSHP (**APPENDIX A**)

Preconstruction photographs will be obtained to document site conditions prior to initiating work, including the excavation locations, support facility locations, vegetation, roadways, and general conditions for comparison to post-restoration conditions.

5.1.1 Permits/Notifications

PIKA-Insight and Tetra Tech will verify the proper communications protocol and points of contact with the USACE COR and CJAG personnel prior to mobilization for the remedial action activities. PIKA-Insight and Tetra Tech will communicate with the CJAG personnel and Range Control (614-336-6041) to coordinate construction activities and access to the RVAAP-50 Atlas Scrap Yard daily prior to arriving at the site. CJAG is typically accessible from 0700 to 1600 Eastern Time. Contractors are generally not allowed through the main gate until 0700 and are expected to have all personnel off the installation (i.e., back out the main gate) by 1600. Permits and notifications will be in place before mobilization for work. The OHARNG will review and approve correspondence, to include permit applications and notifications. At least 15-days prior to mobilization for demolition of the incinerator and excavation of the contaminated soil at the FIA a notice will be provided to Ohio EPA, by the OHARNG. The Notification of Demolition and Renovation/Abatement and Notification Fee Worksheet will be submitted to the Ohio EPA, Division of Air Pollution Control by the Ohio EPA eBiz website by PIKA-Insight. Blank copies of the Notification Fee Worksheet and Draft Notification of Demolition and Renovation/Abatement are included in **APPENDIX C.** PIKA-Insight will pay the fee to the state of Ohio.

At least one week prior to the initiation of the RA operations, Range Control will be contacted to verify the availability of requisite services and to confirm the means used to summon the services, including verification of telephone numbers listed in the APP/SSHP.

5.1.2 Tree Removal

Removal of trees greater than 3 inches in diameter at breast height and limbs greater than 3 inches in diameter must occur between October 1 and March 31, outside of the Northern Long-Eared Bat roosting season. A separate Tree Removal Plan was submitted to describe this activity and approved by the USACE, ARNG, and OHARNG (APPENDIX E). PIKA-Insight identified trees that have already been removed and will notify the OHARNG Environmental Office two weeks in advance of tree removal. Tree removal at FSA was completed in March 2023 prior to finalizing this RD. Tree removal at the FIA is planned for late winter/early Spring 2024.

5.1.3 Utility Locate

There are no utilities, such as potable water and electricity, at the project sites on CJAG. However, a commercial utility locating company will be used to confirm that there are no active utilities in the project areas that could be impacted by project work.

5.1.4 Pre-Construction Survey

Planned excavation areas within the FIA and FSA will be surveyed by a surveyor licensed in the State of Ohio in advance of excavation activities so that complete excavation boundaries are accurately identified prior to starting work. The surveyor will stake out the horizontal (northing and easting) coordinates for each excavation site to the nearest 0.5 foot and elevation to the nearest 0.1 foot to accurately depict existing conditions. The horizontal datum will be the North American Datum of 1983, Ohio State Plane Coordinate System 83 in U.S. survey feet. The vertical datum will be the North American Vertical Datum of 1988. Measurements will be reported and recorded in U.S. survey feet. The corners and any inflection point along the perimeter of the planned excavation areas will be located using either global positioning system or traditional land surveying methods to a horizontal accuracy of +/- 0.5 feet and marked.

5.1.5 Former Incinerator Area Delineation

The limits of soil excavation at the FIA have not been completely defined. Two samples (ASYsb-064 to the north and ASYss-019M adjacent to the incinerator) have been collected at the FIA, but do not adequately delineate the boundaries of the excavation area. Prior to excavation, a preliminary delineation will be performed using an X-Ray Fluorescence (XRF) field screening tool to delineate lead in the soil to 200 mg/kg. The extents of the contaminated soil will be measured by taking XRF measurements in 20-foot by 20-foot areas situated in a grid as shown on FIGURE 5-1. To prevent cross-contamination between measurements, an unused sheet of plastic will be placed between the ground and the XRF sensor before the sensor is placed to the ground. Soil samples will also be collected in plastic bags before holding the XRF to the side of the bag to collect the reading. XRF measurement locations will be flagged for future reference.

Using XRF lead concentrations that are less than 200 mg/kg as a guide, eighteen (18) discrete delineation soil samples will be collected at the FIA to identify the outer extent of the excavation and placed in jars and sent to the fixed-base laboratory for lead analysis to corroborate the readings obtained from the XRF as indicated in TABLE 5-1. The fixed-base laboratory samples will provide the basis for the delineation of the excavation area. FIGURE 5-2 shows a rough example of where the delineation samples will be collected.

The goal of the pre-excavation delineation sampling is to ensure the outer boundary of the excavation area is defined prior to initiating excavation. However, should a delineation sample exhibit a fixed-base laboratory lead concentration greater than 200 mg/kg, the boundary of the excavation in this area will be expanded, and a confirmation sample will be collected in this area post-excavation.

5.2 MOBILIZATION AND SITE PREPARATION

Once the work plans have been approved, PIKA-Insight, Tetra Tech, EFS, and GEO will mobilize personnel, heavy equipment, Enhanced Soil Vapor Thermal Treatment (ESVT) system equipment, and support facilities to the job site in the sequence listed below. Placement of the ESVT system and surrounding support areas are provided on FIGURE 5-2 and FIGURE 5-3 for the FIA and FSA, respectively.

After providing the required notifications, EFS will:

- supply support facilities including sanitation and temporary utilities.
- install a laydown area for crew use.
- maintain hydration/drinking water during the work.
- demarcate work zones.

1

Table 5-1. Sampling and Analysis Plan

Sample Type/ Location	Sampling Method	Depth of Sample (ft)	Number of Samples	Number of Replicates	Start Sample ID	End Sample ID	Field Duplicate	TCL VOCs, TCL SVOCs, TCL Pesticides, PCBs, Explosives, Nitroglycerin, Nitroguanadine, Nitrocellulose, TAL Metals, pH	TCLP VOCs, TCLP SVOCs, Pesticides, Herbicides, PCBs, TCLP Metals	pH, Flashpoint, Reactivity, Ignitability	PCB	B(a)P	Lead	Asbestos
United States Environmental Protection Agency Method(s)					-	-	-	**8260B, 8270C, 8081A, 8082, 6010, 6020, 7471, 8330B**	**1311, 8260B, 8270C, 8081A, 8082, 6010, 6020, 7471**		**8082A**	**8270C, 8310**	**6010, 6020**	
Delineation (pre-excavation)														
FIA Soil	Grab	0 to 1	18	1 per 10	ASYss-127-0001-SO	ASYss-144-0001-SO	ASYss-###-0002-SO	-	-	-	-	-	X	-
Characterization														
Off-Site Borrow	Composite	N/A	1	0	OFFbo-001M-0001-SO	-	-	X	-	-	-	-	-	-
FIA Soil	Composite	0 to 1	1	0	ASYpl-150-0001_SO	-	-	-	X	X	-	-	X	
FIA Incinerator	Grab	N/A	3	0	ASYin-150-0002-WS	-	-	-	X	X	-	-	X	X
Former Bldg T-4704	Grab	0 to 1	1	0	ASYss-190-0001-SO	-	-	-	-	-	X	-	-	-
Performance														
FSA Treated Soil	Grab	N/A	10	1 per 10	ASYpl-160-0001-SO	ASYpl-160-0010-SO	ASYpl-160-0011-SO	-	-	-	-	X	-	-
Confirmation (post-excavation)														
FIA	Grab	1	10	1 per 10	ASYcs-161-0001-SO	ASYcs-170-0001-SO	ASYcs-###-0002-SO	-	-	-	-	-	X	-
FSA	Grab	1	18	1 per 10	ASYcs-171-0001-SO	ASYcs-188-0001-SO	ASYcs-###-0002-SO	-	-	-	-	X	-	-

BaP	Benzo(a)pyrene	TCLP	Toxicity Characteristic Leaching Procedure
FIA	Former Incinerator Area	VOCs	Volatile organic compound
FSA	Former Storage Area	cs	Confirmation
PCB	Polychlorinated biphenyl	pl	Soil waste pile
RVAAP	Ravenna Army Ammunition Plant	bo	Borrow
SVOC	Semi-volatile organic compound	in	Incinerator
TAL	Target Analyte List	###	the location number of the primary
TCL	Target Compound List		

2

Project field forms and quality control forms for activities performed during the removal action are provided in **APPENDIX D**.

5.2.1 Sanitary Facilities

Portable sanitary facilities will be installed at the laydown areas identified within the FIA and FSA.

5.2.2 Heavy Equipment for Excavation and Demolition

Trees were removed mechanically using a feller-buncher as discussed in the Tree Removal Plan (**APPENDIX E**).

Earthmoving equipment to be used by EFS will consist of a Cat 320/326 Excavator, a Cat 239/279 tracked skid steer for smaller tasks associated with material handling and support, and a Cat 938 loader for grading and material handling. The Cat 320/326 Excavator will also be used for demolition of the incinerator at the FIA. A crane will be utilized by GEO to install the piping for the FSA ESVT system. In addition, the following equipment may be utilized on this project for mobilization, demolition, excavation, backfill/restoration, and/or demobilization:

- Skid steer hammer
- Cat 315 with thumb
- Cat D3/D4 dozer
- Cat CP54 pad foot compactor
- Hydro seeder
- Pressure washer

5.2.3 Support Equipment

EFS and GEO support equipment will consist of the following:

- Pickup trucks (1-4)
- Tracked skid steer w/broom (1)
- Office trailer (1)
- Water buffalo (1)
- Portable generator (1)

- Traffic control signs (as needed)
- Storage unit/Conex box (1)
- Sanitary facilities (1-2)
- Handwash facilities (1-2)

This equipment will be located at both the FIA and FSA as appropriate.

A minimal volume of water may be needed for excavation-related activities (e.g., dust prevention). Any water that is needed will be obtained from the City of Newton Falls, OH municipal water supply.

5.2.4 Thermal Treatment Equipment

The contaminated soil at ASYss-126M will be excavated using conventional construction equipment provided by EFS, such as excavators, bulldozers, front-end loaders, and tracked skid steers. The contaminated soil will then be staged to undergo ex-situ thermal treatment, which will remove PAH contaminants through exposure to high temperature in a treatment cell.

Thermal conductive heating will be applied to the rods of the ESVT system via GEO's gas thermal remediation system powered by propane. Electricity for the system will be provided by a diesel generator capable of running the thermal remediation system. Upon completing the thermal treatment of the soil, soil performance samples will be collected from the treatment cell to make sure the contaminated soil has been successfully treated to concentrations below the PAH CUGs. Soil performance samples will be analyzed for the PAHs listed in **TABLE 4-1**. Confirmation sample results will be conveyed to the Army and Ohio EPA through Tetra Tech – PIKA-Insight project personnel for approval.

5.2.5 Site Preparation

Site preparation will include clearing obstacles, surface structures, or vegetation that could interfere with excavation activities, identifying utilities, and setting up temporary decontamination facilities. In addition, sediment and erosion control measures will be installed and maintained as needed to control runoff from the work area as discussed in **SECTION 7.1**.

5.2.6 Traffic Plan

Signs will be posted and barricades will be erected to provide traffic directions to key locations to RVAAP-50. These signs will be in visible locations and be updated and maintained as necessary. Transportation routes for incoming and outgoing vehicles and heavy equipment will be established to minimize the impact on CJAG and surrounding community. The proposed truck routes will reflect the shortest egress from RVAAP-50 to the primary roadway (State Route 5). Traffic control devices used on the project will conform to Department of Transportation (DOT) applicable standards. FIGURE 5-4 outlines the haul route. The plan is to make sure that adequate consideration is given to the safety of workers during the RA.

5.3 DEMOLITION FORMER INCINERATOR

After tree removal at the FIA and prior to excavation, the remaining exterior remnants of the former incinerator will be demolished. Prior to demolition, composite samples of the brick and mortar and other materials from the former incinerator structure will be collected and analyzed for waste characterization. The samples will be analyzed for TCLP metals and asbestos. If waste characterization samples are classified as non-hazardous, a skid steer or excavator will demolish the structure and stockpile the material in roll off bins. Scrap metal from the incinerator demolition will be recycled. Dust from the demolition process will be controlled with a water spray.

The demolition footprint will be minimized to eliminate mixing of demolished materials with the surrounding contaminated soil. FIGURE 5-2A and FIGURE 5-2B (from Leidos) depict the incinerator area, design, and photos of the structure. Waste debris will be managed per procedures discussed in SECTION 5.5.4.

5.4 EXCAVATION

Prior to ground disturbance, each excavation area will be surveyed and demarcated by stakes. Erosion control material will be installed to minimize sediment runoff as shown on FIGURE 5-2 and FIGURE 5-3 for the FIA and FSA, respectively. Dust generation will be minimized as described in SECTION 7.2. The health and safety of remediation workers will be covered in the APP/SSHP.

Soil removal will be accomplished using conventional construction equipment, such as excavators, bulldozers, front-end loaders, and tracked skid steers. Oversize debris will be crushed or otherwise processed to meet disposal facility requirements. Water accumulated in excavations may be discharged to ground surface only after analytical results are obtained and approval is received from USACE and the ARNG/OHARNG (forms for ground surface discharge are provided in **APPENDIX D**). Ground surface discharges are subject to strict state and federal discharge conditions as well as specific guidelines set under the RVAAP restoration program and by the CJAG Environmental Office.

Specific details of the excavations at the FIA and FSA are discussed in the subsequent sections.

5.4.1 Former Incinerator Area

It is anticipated that the lead-contaminated soil at the FIA will be classified as hazardous for disposal purposes. Delineation sampling and characterization sampling will dictate handling and disposal requirements. The soil will be characterized prior to excavating activities. The excavated soil in this area may be very wet and it will initially be stockpiled within the excavation to allow free water to drain from it. If the free water does not drain adjacent dry soil, obtained from within the excavation footprint), will be mixed into the stockpiled soil. The contaminated soil will be direct-loaded from the excavation area or stockpile after the free water drains into haul trucks for disposal at a permitted facility.

5.4.2 Former Storage Area

Benzo(a)pyrene impacted soil shown on **FIGURE 2-4** will be excavated from ASYss-126M and transported to the constructed thermal desorption system pad. The process for constructing the treatment cell is described in **SECTION 5.5**.

5.5 THERMAL TREATMENT

The following sections describe activities associated with the construction, operation, performance sampling, and waste management for the ESVT system at the FSA. The thermal treatment system will involve the excavation and placement of contaminated soil into a constructed pile. Within the constructed pile will be thermal heating wells, soil vapor extraction wells, thermal monitoring wells, and pressure monitoring wells. An underdrain layer consisting of crushed rock and screened pipes atop an HDPE liner will be included to convey stormwater. The insulating layers will be

comprised of 4-inch Rockwool, which will prevent heat loss to the surrounding environment, and the liner will be comprised of 10-inch poly sheets, which will be installed to eliminate fugitive emissions from the thermal treatment pile and provide necessary waterproofing (see Figure 5-5).

Propane heating units will be connected to the heating wells to heat and mobilize the contaminants in the soil. The vapor extraction system will collect the volatilized contaminants and return them to a vapor separator and knock-out tank where condensed liquids will be separated and transferred to a holding vessel for treatment through liquid-phase granular activated carbon (GAC). Dried vapors will be directed to vapor-phase GAC for treatment prior to discharge to the atmosphere. Based upon the contaminated area at the FSA, design specifications for the thermal treatment system are as follows:

- Pile dimensions (L x W x H) (feet): 110 x 25 x 10
- Slope: 1:1
- Soil pile layers and thickness: 2, 5 feet
- Number of heating wells: 8, 5-inch diameter and 110 feet long
- Number of SVE wells: 8, 2-inch diameter and 110 feet long
- Number of thermal monitoring wells: 3
- Number of pressure monitoring wells: 3
- Thermal treatment maximum temperature: 617 degrees Fahrenheit
- Water treatment system: Maximum capacity – 2991 gallon/day
- Vapor treatment system: Maximum capacity – 100 SCFM

5.5.1 Construction

Construction of the ESVT system contaminated soil pile will involve the following steps:

1. The area where the ESVT system will be built will be cleared and leveled for the contaminated soil pile to be constructed.
2. A foundational drainage layer will be placed along the base of the soil pile to insulate it from the ground to prevent heat loss from the contaminated soil pile, and to drain liquids from the contaminated soil pile. A layer of crushed rock on top of concrete and/or high-

density polyethylene liner will be used with slotted steel piping placed as drainage through the crushed rock.

3. An excavator will remove and pile the contaminated soil, one layer at a time. Each layer must be placed sequentially to allow for the heating pipes and soil vapor extraction pipes to be placed into the pile.
4. An excavator will place the heating pipes and soil vapor extraction pipes onto the soil using a spreader bar after the first layer has been formed.
5. After the first row of heating pipes and soil vapor extraction pipes have been placed, more contaminated soil will be placed on top of the heating pipes.
6. After the soil has been added, another set of heating pipes and soil vapor extraction pipes will be placed on top of the soil.
7. This process will be repeated until the soil treatment pile has been completely built.
8. After the construction is complete, insulation material(s) will be placed along the sides and top of the pile to mitigate heat loss to the atmosphere.
9. Once the insulation has been placed, supplemental material will be placed on the outside of the pile to keep rain from entering.

5.5.2 System Startup and Operation

The thermal treatment system will be designed and installed to operate continuously for 24 hours per day and 7 days per week from the initiation of heating until the process is discontinued. System operation is comprised of the following phases:

Start-up: During this period, the thermal treatment and soil vapor extraction system will be activated, and compliance will be recorded. The heaters will be tested and operated periodically based on operational data. This phase will enable GEO to meet relevant permitting requirements, evaluate the potential for methane and sulfur compounds, and gradually increase extraction of vapor, water, and non-aqueous phase liquid from the soil pile. Concentrations of vapor phase contaminants, including methane, will be analyzed remotely in real-time from GEO's Orange, California headquarters using a gas chromatograph/flame ionization detector with a methanizer.

Heating: The heaters will be activated to raise the target treatment zone temperature to the target treatment temperature (617 °F), while maintaining pneumatic control of the pile top and sides and the effluent extraction and treatment system.

Heating Maintenance and Sustained Treatment: The heaters will be utilized to sustain appropriate temperatures for about 95 calendar days throughout the target treatment zone and extract contaminants from the pile at or near estimated target treatment temperatures.

Post Heating Cool-Down: Following ESVT system treatment the system will be shut down, and 7 to 10 days of cooling will be included prior to confirmatory sampling activities.

5.5.3 Performance Sampling

The performance sampling process will commence once the specified temperature and performance requirements have been met and verified through multiple sources of evidence and operational data, including temperature readings and decreasing contaminant concentrations in the treatment system. Upon completion of performance sampling, heating application will be discontinued, and vapor extraction will continue as the soil temperature decreases. The thermal insulation layer will be removed to facilitate heat dissipation and further cooling of the soil.

Performance sampling will be executed in the following steps:

1. Using a decontaminated core barrel sampler and sample sleeve, ten (10) performance samples will be horizontally extracted from the soil pile at various depths. The core barrel will be disassembled, and the sample sleeves will be removed while wearing heat-resistant personal protective equipment.
2. Each sample sleeve will be capped at both ends with Teflon tape or aluminum foil and PVC end caps. The red endcap will be labeled with the sampling depth interval and used to differentiate the top and bottom of each sample sleeve.
3. The capped and sealed sleeves will be placed in an ice bath for cooling and marked with sample identification information. The cooling process will not exceed 2-3 hours and samples will not be uncapped during this period to prevent loss of volatile organic

compounds. The cooling area will be protected from direct sunlight, high ambient temperatures, and rain.

4. Upon cooling to a temperature no higher than 50°F (10°C), the cooled sample sleeves may be processed for laboratory analysis of benzo(a)pyrene.

5.5.4 ESVT System Waste Management

The ESVT system is designed to effectively capture and treat steam and volatilized contaminants. It incorporates a network of vapor extraction wells connected to a blower system as shown on **FIGURE 5-6**. This design incorporates extra capacity to make sure pneumatic control is consistent and minimize the risk of fugitive emissions.

The vapor and condensate treatment system includes the following components as shown on :

1. Primary vapor separators: Knock-out tanks for holding and transferring condensed liquids.
2. Vapor conditioning system: Primary cooling and condensation of off-gas. Includes heat exchangers and a cooling system to reduce downstream media loading and improve the overall off-gas treatment efficacy.
3. Vapor phase GAC media: Filters the conditioned off-gas and is followed by atmospheric discharge that meets regulatory requirements.
4. Weir tank and holding tank for liquids that will be treated using GAC prior to discharge to a sanitary sewer system, disposal facility, or ground surface only after analytical results are obtained and approval is received from USACE and the ARNG/OHARNG (forms for ground surface discharge are provided in **APPENDIX D**). Ground surface discharges are subject to strict state and federal discharge conditions as well as specific guidelines set under the RVAAP restoration program and by the CJAG Environmental Office (see **SECTION 7.3**).

The waste streams produced by the ESVT system and subsequent disposal processes are as follows:

1. Off-gas vapor: The extracted contaminant off-gas will undergo treatment to meet regulatory air discharge standards and ensure health and safety requirements. Generally,

over 99.9% of contaminant species are removed from the process stream prior to atmospheric discharge.

2. Liquid: Discharge collected from the knock-out tanks and settling in weir tanks is treated. Volatile and semi-volatile organic compound vapors are condensed into a non-aqueous phase liquid that can be separated from the water phase. The small volume of non-aqueous phase liquid will be skimmed for off-site disposal. The remaining water will be treated with liquid GAC to remove residual chemicals and stored in a holding tank prior to discharge to the sanitary sewer, in accordance with state and facility regulations.
3. GAC: Both the vapor GAC and liquid GAC will be disposed of off-site at the end of the ESVT process. Monitoring sampling ports are located before each vessel and at the discharge stack.

To ensure compliance with effluent limitations, the treated vapor-phase and treated liquid-phase discharge streams will be monitored and/or sampled. A photoionization detector (PID) will be used daily to evaluate the concentration of VOCs in the effluent vapor stream. If PID readings from the secondary carbon unit become elevated and indicate breakthrough, a carbon change-out will be performed to maintain the effectiveness of the treatment system. Additionally, water samples will be collected from the liquid-phase units weekly to ensure compliance with effluent standards. If the water samples indicate breakthrough, a carbon change-out will be performed to maintain the effectiveness of the treatment system.

5.6 SAMPLING AND ANALYSIS

Waste characterization, off-site borrow, delineation, and confirmation samples will be collected and sent to the fixed-base laboratory to be analyzed as described in the following subsections and TABLE 5-1. RVAAP-50 sampling activities will be conducted in accordance with the Facility-Wide Sampling and Analysis Plan. Sample nomenclature will follow the Facility-Wide Sampling and Analysis Plan. Characterization, delineation, and confirmation sampling results will be conveyed to the ARNG, USACE, and OHARNG through Tetra Tech – PIKA-Insight project personnel by e-mail.

5.6.1 Waste Characterization Sampling

A composite waste characterization soil sample will be collected from the FIA to facilitate off-site disposal prior to initiation of the RA so that the soil for disposal is properly managed and disposed of at a permitted landfill. Ten subsamples will be used for the composite sample. The subsamples will be collected in-situ within the gridded excavation area prior to the initiation of work. For the FIA, the grid will be determined after the delineation sampling is completed. Each subsample will be collected at a depth of 0 to 1 foot below ground surface within a random location of each grid. The sampling will meet the requirements of the disposal facility. Characterization samples will be collected at the locations and frequencies shown in **TABLE 5-1**. Additional characterization samples will be collected from the incinerator structure and submitted to PSI in Pittsburgh, Pennsylvania, to be characterized for asbestos (certifications provided in **APPENDIX B**).

5.6.2 Off-Site Borrow Sampling

One composite soil sample will be collected from the off-site borrow area (Freedom Materials, Ravenna, Ohio) that will be used as backfill to restore the FIA excavation. Ten subsamples will be used for the composite sample. The subsamples will be collected in-situ within the area of the borrow source that will be used for the FIA. The borrow area soil analytical results will be screened against a provided list of facility background concentrations. The earth fill will be approved by the OHARNG and, at a minimum, be at or below the facility-wide background concentrations. **TABLE 5-1** provides additional details about the sampling types, frequency, and analyses associated with the borrow material.

5.6.3 Confirmation Sampling

The RVAAP-50 RAs include removal of soil containing concentrations of contaminants of concern (COCs) that exceed site CUGs. The goal is to remove surface soil with concentrations of COCs greater than the residential CUGs at the FIA and Composite Worker Soil Regional Screening Levels at the FSA.

As discussed in **SECTION 5.1.5**, prior to initiating excavation at the FIA, eighteen (18) discrete delineation soil samples will be collected to identify the extent (i.e., outer boundary) of the excavation area. Upon completion of the excavation at the FIA, ten (10) additional discrete

confirmation soil samples will be collected from the floors and sidewalls of the excavation area to confirm that soil remaining on site has concentrations of COCs below CUGs. Some of the discrete confirmation floor samples at the FIA will be biased towards the areas where contaminated soil was reported in the RI and near the areas of where previous soil samples presented concentrations above the CUGs as shown on **FIGURE 4-1**. Remaining confirmation samples will be collected where contamination is observed during excavation (if any) and then randomly collected over the surface of the excavation floor and walls. **FIGURE 5-2** presents the approximate locations of the confirmation samples at the FIA.

Similar to the delineation sampling process at the FIA, the preliminary confirmation samples will be collected and initially analyzed with an XRF field screening tool to determine the lead concentration. Soil samples will also be collected in plastic bags before holding the XRF to the side of the bag to collect the reading for each sample that is collected within the 20-foot by 20-foot areas. For those XRF soil samples exhibiting lead concentrations below 200 mg/kg, the soil will be placed in glass sample jars and shipped to the fixed-base laboratory for lead analysis to corroborate the readings obtained from the XRF. The fixed-base laboratory samples will provide the basis for the confirmation of the excavation area.

The anticipated number of confirmation soil samples that will be collected is provided in **TABLE 5-1**. Acceptance criteria for confirmation samples are provided in **SECTION 4.1**. Initial confirmation samples are expected to be collected at depths no greater than 1.0 feet bgs; however, should a confirmation sample exhibit a fixed-base laboratory concentration greater than its respective CUG, additional excavation and confirmation sampling may be required in the area where the sample was collected and consultation with the OHARNG, Ohio EPA, and the site PM will occur. If additional excavation (lateral and/or horizontal) is warranted and approved, additional confirmation soil samples will be collected for fixed-base laboratory analysis. This process will continue until the confirmation samples exhibit concentrations below their respective CUG.

The purpose of this sampling is to demonstrate that the remaining COCs in the soil do not present a risk to resident receptors at the FIA and a full-time worker (commercial/industrial) at the FSA.

RVAAP-50 sampling activities will be conducted using a disposable plastic trowel or spoon in accordance with the Facility-Wide Sampling and Analysis Plan (Section 5.6.2.1.2).

5.6.4 Data Gap Sampling

A data gap for PCB analysis of soil was discovered at RVAAP-50 during evaluation of the Atlas Scrap Yard RI Report (Leidos, 2017). As such, a discrete surface soil sample (0 to 1 foot bgs) will be collected at the location of the former Building T-4704 Roads and Grounds Maintenance Building for PCBs analysis. Results of the soil sample analysis will be relayed separately to ARNG. The former location of Building T-4704 is depicted in **FIGURE 2-3**. **TABLE 5-1** provides additional details about the sampling types, frequency, and analyses at the former Building T-4704.

5.6.5 Sample Handling

Following the sample preparation activities, the samples containers will be labeled, sealed, and managed under a chain of custody. Samples will be shipped same day via laboratory courier service to ALS Middletown in Middletown, Pennsylvania.

5.6.6 Laboratory Analyses

Laboratory analyses will be performed by the identified fixed-base laboratory in accordance with **TABLE 5-1**. Characterization, delineation, and confirmation sampling results will be provided to the OHARNG prior to disposal and commencing backfilling operations.

5.7 WASTE MANAGEMENT

Waste materials expected to be generated include vegetation, potentially hazardous lead-contaminated soil, PAH-contaminated soil, incinerator debris, off-gas vapor, GAC, municipal waste, and minimal contaminated water. Waste materials will be managed as described in the CJAG Waste Management guidelines attached in **APPENDIX D**. A third-party solid waste bin will be located at the excavation areas for municipal waste.

Liquid waste is not expected in large quantities as the majority of water expected for handling will be decontamination and thermal treatment water. Water will be managed according to OHARNG Environmental Procedures. The decontamination water will be collected and pumped directly into

labeled, DOT-approved 55-gallon drums or polyethylene tanks and will be stored on secondary containment. The thermal treatment water will be collected as described in **SECTION 5.5.4**. Liquid waste will be characterized and proper management and disposal methods identified and implemented. Liquid waste will not be discharged to the surface water, storm drain/ditch, or transported to a disposal facility unless properly characterized and done in accordance with applicable laws and in accordance with the OHARNG Environmental Procedures and CJAG Waste Management Guidelines (both attached in **APPENDIX D**).

Contaminated soil will be stockpiled and stored within the proposed excavation areas at each of the sites until it can be direct loaded into on-road haul trucks. Contaminated soil stockpiles will be covered at the end of each day to prevent wind damage to the stockpile and contact of precipitation with the contaminated soil. Soil containing lead and identified for off-site disposal will be characterized as described in **TABLE 5-1**. Off-site disposal facilities will be selected based on waste characterization data collected from each waste stream. It is anticipated that the contaminated soil at the FIA exceeds Toxicity Characteristic Leaching Procedure limits and, therefore, will be profiled as hazardous waste for disposal at one of the waste disposal facilities listed in **TABLE 3-1**. If the disposal facility requires additional testing, then required testing will be performed, as necessary.

Municipal waste (trash) will be removed from the site. Contractors will not use CJAG municipal waste dumpsters, except for scrap metal (scrap metal is not anticipated).

The temporary storage areas for the liquid wastes, contaminated soil (and their associated stockpiles, and municipal trash will be inspected at required intervals (weekly) in accordance with CJAG Waste Management Guidelines.

The management, transportation, and disposal of waste streams will be coordinated with the OHARNG Restoration Representative. The OHARNG Restoration Representative will sign waste profiles and waste manifests for the disposal of project wastes at an approved disposal facility that are prepared by the Contractor PM or Field Superintendent. Transportation paperwork (manifests or shipping papers) and on-road haul truck placards must be in accordance with federal, state, and local regulatory requirements, and disposal facility requirements. A draft of the transportation

paperwork containing "base" information will be submitted to the OHARNG Restoration Representative for review and approval a minimum of one week prior to shipment of the material. The approved transportation paperwork will then be completed as appropriate by the Contractor PM or Field Superintendent together with the OHARNG Restoration Representative in the field during remedial activities. The OHARNG Restoration Representative will sign waste profiles and waste manifests for the disposal of project wastes. If the waste materials are characterized as hazardous, the disposal facility will provide the Land Disposal Restriction Notification with the hazardous waste manifest. Waste will be transported by licensed waste haulers to OHARNG-approved licensed off-site disposal facilities. Manifests, shipping documents, and disposal facility approval letters will be incorporated into the Remedial Action Completion Report (RACR).

5.8 BACKFILL AND SITE RESTORATION

After each soil excavation area is completed, the volume and depth of removed soil will be documented by performing a survey of the excavated surface. The post-excavation survey will be consistent with the requirements of the pre-excavation survey. Upon demonstration that excavation area confirmation soil sample results at the FIA meet CUGs, approved borrow material will be brought on-site to backfill the excavation. Upon demonstration that soil treatment performance samples at the FSA meet CUGs, the thermally treated soil will be used as backfill.

Site restoration will be performed to return the disturbed areas to prior conditions. There are no anticipated changes to site elevation or drainage features associated with this RA. Once each excavation is backfilled, it will be graded and seeded as described below. Seeding of the permanent vegetation will occur at the disturbed areas within 14 days of cessation of excavation activities. Permanent vegetative cover will be placed with consideration of establishment requirements, adaptability to site conditions, aesthetics and natural resource values, maintenance requirements. Restoration of sites will occur progressively, as remediation and backfill of areas is completed.

Revegetation of disturbed areas, including equipment staging areas, will be conducted in accordance with the requirements of the CJAG OHARNG Environmental Procedures Restoration Program Specific Version (15 July 2022). A seed mix will be selected and provided to the

OHARNG for approval. Only native species, as identified in the Environmental Procedures, will be used. Annual rye may be placed to provide a quick temporary cover. The annual rye may be mixed with other more permanent species to provide long-term cover once the annual rye dies off. Non-native species will not be introduced. PIKA-Insight will coordinate the required seed mixes with the OHARNG Restoration Representative prior to mobilizing.

Site restoration will include removal of erosion and sediment controls and excess sediment that has been collected. These controls will be removed when vegetation establishment meets or exceeds 70% ground cover.

Site restoration will also include repair of damaged roadways in accordance with contractual requirements. Roads, parking areas, or lay-down areas will be repaired after the removal action. Unpaved roads that are used to access the project areas are little more than partial gravel driveways. These driveways will be left with no ruts nor areas subject to ponding water and that they be passable with a light duty pickup truck. Where necessary, ruts and depressions along equipment movement areas and construction support areas will be backfilled with clean fill, regraded, seeded, and mulched. Where roads have been modified, restoration of these areas and/or areas of travel damage will be completed as remediation activities are completed. The final grade of areas disturbed during remedial activities will be approved by the Field Superintendent and the USACE Contracting Officer's Representative, with input from ARNG and OHARNG representatives.

Wetlands within the FIA and FSA will be impacted by this removal action. Mitigation is required due to the amount of wetlands impact by the project and the quality of the current wetlands that will be impacted. The wetlands mitigation and restoration plan will be provided under separate cover for review by the Ohio EPA prior to restoration activities. This separate contractor will be involved in the restoration of the sites at the end of the remediation to make sure the sites are restored to the same grade and elevation and to seeding of the wetlands area.

6.0 CONSTRUCTION SEQUENCE AND SCHEDULE

The following sections provide a tentative sequence of activities and schedule.

6.1 CONSTRUCTION SEQUENCE

The proposed sequence of construction activities for this project is presented below:

- Erosion and sediment controls will be constructed, stabilized, and determined to be functional before any general site disturbance.
- Trees were removed in March 2023 at the FSA in accordance with the Tree Removal Plan (**APPENDIX E**). Tree removal at the FIA is anticipated to be completed in early Spring of 2024.
- Collect delineation samples at the FIA to identify extent of the excavation.
- Collect samples for characterization of soil for disposal at the FIA prior to excavation.
- Notify Ohio EPA of planned demolition (10 days prior to any demolition activities).
- Demolish the incinerator structure at the FIA.
- Excavate PAH-contaminated soil and construct and begin operation of the ESVT system including excavation and placement of soil at the FSA on the ESVT system treatment pad.
- Conduct confirmation sampling and analysis at the FSA.
- If required, reinforce the FIA access road over the stream culvert to support on-road dump truck traffic during transport of excavated soil. Roads, parking areas, or lay-down areas that need to be hardened to support the remedial actions will be reinforced also.
- Excavate lead-contaminated soil at the FIA and directly load it into on-road dump trucks for disposal.
- Conduct confirmation sampling and analysis at the FIA.
- Remove water that accumulates in open excavation(s) by pumping and storage in 55-gallon drums or a temporary water-tight storage tank.
- Maintain dewatering processes and erosion and sediment control practices throughout work period.
- Restore disturbed areas by seeding or repaving upon receipt of clean confirmation sample results.

- Remove remaining erosion and sediment controls after final stabilization has been achieved.
- Prepare and deliver RACR.

6.2 SCHEDULE

A preliminary mobilization occurred in March 2023 to cut trees larger than three inches in diameter at breast height in accordance with the Tree Removal Plan (APPENDIX E) at the FSA. The primary remediation mobilization will occur after required approvals are obtained in accordance with this RD and is currently anticipated to occur in Spring of 2024. Tree removal at the FIA will commence early Spring 2024 and will conclude by April 1, 2024, prior to remediation activities.

Remediation milestones are presented in TABLE 6-1.

Table 6-1. Remediation Schedule

Task	Start Date	Duration	End Date
Preliminary Mobilization for Tree Removal and Land Survey	March 4, 2024	9	March 13, 2024
Former Storage Area			
Mobilization and Site Preparation	March 25, 2024	14	April 8, 2024
Excavation and Treatment System Construction	April 8, 2024	31	May 9, 2024
Treatment System Commissioning, Startup, Operation, and Shutdown	May 9, 2024	129	September 15, 2024
Backfilling and Site Restoration	September 15, 2024	14	September 29, 2024
Demobilization	September 29, 2024	3	October 2, 2024
Former Incinerator Area			
Mobilization and Site Preparation	May 9, 2024	3	May 12, 2024
Excavation and Disposal	May 13, 2024	13	May 26, 2024
Confirmation Sampling	May 27, 2024	7	June 3, 2024
Backfilling and Site Restoration	June 4, 2024	7	June 11, 2024
Demobilization	June 12, 2024	2	June 14, 2024
Post Remediation			
Weekly Stormwater Inspections	June 24, 2024	___	70% Vegetation Establishment (FSA and FIA)

Backfilling and grading will occur within 7 days of the last excavation and/or confirmation sampling event. The time from the beginning of primary remediation mobilization to site

regrading and restoration (with the exception of vegetation establishment) will not exceed 180 days.

Adherence to review periods is a key element in maintaining the proposed schedule. The schedule will be impacted (plus or minus) by changes to the turnaround times for document reviews. Standard Army and Ohio EPA reviews for documents are 30 and 45 days, respectfully. The Army and Ohio EPA will request additional review time if it is required. **APPENDIX F** will be a placeholder for the Ohio EPA approval letter.

7.0 ENVIRONMENTAL PROTECTION

7.1 EROSION AND SEDIMENT CONTROLS

There are three basic methods that will be used to control soil movement at the site: storm water runoff control, sediment control, and soil stabilization. In general, erosion and sediment control will be accomplished by controlling storm water runoff and using sediment controls. Erosion controls will be adjusted in the field and will need to be used and moved wherever site topography and water flow go.

Initially controlling erosion will be implemented by minimizing storm water runoff flowing into the disturbed and excavation areas and storm water runoff from the work areas. See **SECTION 7.1.1** for additional details.

Sediment control is necessary for the protection of areas downgradient of excavation and disturbed areas. See **SECTION 7.1.2** for additional details.

Soil stabilization will be performed at disturbed areas to control potential erosion of soil caused by rain, sheet flow, and rills. See **SECTION 7.1.3** for additional details.

With the small size of the work areas and limited time work will be performed, it is not anticipated that runoff from the excavation and disturbed areas will be an issue.

Soil-disturbing activities at RVAAP-50 will be minimized and will proceed in a manner to prevent erosion and control sedimentation. Earthwork, grading, movement of equipment, and other operations likely to cause siltation and tracking of sediments will be planned and performed in a sequence as to avoid or reduce pollution in adjacent waters. Clearing and grubbing activities will be performed in a way that minimizes erosion and controls sedimentation.

Erosion and sediment controls will be established as shown in **FIGURE 5-2** and **FIGURE 5-3** for the FIA and FSA, respectively. The erosion and sediment control perimeter at the FIA is subject to change pending the results of the pre-excavation delineation sampling.

The maintenance of erosion and sediment controls and the construction site will include weekly inspections until vegetation is re-established (70% coverage is reached) after the site is restored. Sediment and erosion controls will also be inspected within 24 hours of a rainfall event of 0.5 inches or more. A corrective action log will be kept and include a description of maintenance and repair activities conducted on any erosion and sediment controls. Although no stormwater permit is required (as disturbance for the RA is under an acre), erosion and sediment control activities and inspections will be in compliance with the Ohio EPA General Stormwater Permit for Construction Activities.

As a best management practice, excavation and other construction operations will be conducted in a manner to prevent muddy water, eroded materials, and other undesirable constituents of project construction waters from being discharged through storm water runoff.

7.1.1 Runoff Control

Runoff controls will be used to prevent storm water or other overland flow sources at disturbed areas from entering or leaving a work area and to control the occurrence of gully or channel erosion. With the small size of the work areas and limited time work will be performed, it is not anticipated that runoff from the work areas will be an issue. In addition, this RA is the excavation of contaminated soil, and rain will be collected within each excavation and will most likely not runoff. To mitigate storm water runoff into the disturbed and excavation areas, at each work location the Contractor will identify potential overland drainage routes.

Storm water runoff flowing into the disturbed and excavation areas will be collected or diverted away from excavations by grading, berms/diversion structures, sandbags, silt fence, filter sock, or pumping upgradient of these potential overland drainage routes. The implementation of these methods will depend on the location of the work and the potential for the release of contaminants. Appropriate runoff control measures will be selected based on the construction sequence.

Runoff that occurs in work areas will be collected by diversion structures that are directed to enclosed drainage systems and pumped into 55-gallon drums or temporary storage tanks. The collected runoff will be analyzed for disposal options. If analytical results are acceptable, the Contractor will discharge the collected runoff to the ground surface following approval by Ohio

EPA, USACE, and OHARNG in accordance with local, state, and federal regulations and RVAAP-specific discharge parameters.

Diversion structures consisting of sandbags, filter socks, and/or drainage swales will be formed upgradient of construction areas where the volume of overland flow is such that it is necessary to divert flow around excavation areas. As a general best management practice, earthwork and other construction operations will be conducted in a manner to prevent muddy water, eroded materials, and other undesirable constituents of project construction waters from being discharged through storm water runoff.

7.1.2 Sediment Controls

The purpose of sediment control is to retain sediments, which are generated as a result of soil erosion, on site. The typical types of sediment controls will be filter sock, silt fence, and straw bale barriers that will be necessary for disturbed areas at RVAAP-50 where it is harder or impractical to control erosion.

To protect nearby waterways, wetlands, and environmentally sensitive areas, filter sock, silt fence, sandbags, or straw bale barriers will be installed along the downgradient perimeter at work areas.

Filter socks will be placed on a level line across slopes, generally perpendicular to the direction of flow. Filter socks will be secured by 2-inch by 2-inch wooden stakes driven a minimum of 12 inches into the subsurface. Filter sock diameter will be 8 inches or greater. When construction is complete, the compost material within the filter socks will be dispersed across the site, and the mesh will be disposed of.

Silt fences will be constructed using filter fabric that will be staked to provide a barrier to silts, fines, and debris, yet provides passage of runoff. Selection of type and grade of fabric will be made to allow adequate passage of water. Filter fabric will be installed at least 6 inches deep at the bottom of the fence to make sure water cannot flow under the barrier. Stakes used to construct silt fences will be of wood with squared, butt ends and tapered driving points. Filter fabric will be stapled or tied with jute twine to stakes.

Where appropriate, straw bale barriers, sandbags, or rock check dams will be used as sediment traps in small storm water conveyances. Straw bale barriers, if used, will be keyed in at least six inches below grade to make sure water cannot flow under the barrier.

Soil intended for disposal may be stockpiled within the excavation areas prior to direct loading into on-road trucks. However, clean borrow soil may be temporarily stockpiled during backfilling activities. Additionally, paved roads will be free of track-out from the project site through proper implementation of erosion and sediment controls. During excavation activities EFS will utilize the following erosion controls:

- A construction entrance where necessary.
- Filter sock, silt fence, or straw bale barriers at locations for the exterior excavation, upgradient of waterways, wetlands, and environmentally sensitive areas that will not be disturbed near the excavations, and staging areas. Erosion controls will also be installed around the construction entrance and laydown area.

Following completion of the RA, the site will be restored using a seed mixture approved by the OHARNG. Erosion and sediment controls will be maintained until 70 percent of disturbed areas have been revegetated, and removal will be coordinated through the OHARNG Environmental Office.

7.1.3 Soil Stabilization

Approximately 0.5 acres at the FIA and approximately 0.56 acres at the FSA will be disturbed during the various activities associated with the remedial actions. This acreage includes access areas, excavation areas, laydown areas, decontamination areas, staging areas, etc. The purpose of soil stabilization is to protect surface areas and strengthen subsurface areas to minimize or prevent soil erosion. Soil stabilization methods will primarily consist of vegetative soil cover, non-vegetative cover, and structural cover. The preferred method of soil stabilization is the placement of vegetative cover; however, non-vegetative and/or structural erosion control practices may be necessary when disturbed areas cannot be promptly stabilized with vegetation. Vegetative soil cover will include the placement of temporary or permanent seed or the protection of existing

vegetation from construction activities. Structural soil stabilization options will include land grading to provide erosion and runoff control.

7.2 DUST CONTROLS

Dust may be generated during activities such as excavation and transportation. On-site personnel, including the Contractor field superintendent, will monitor working conditions and fugitive dust throughout daily operations. Real time conditions will be communicated to the field superintendent and work stoppage related to mitigating fugitive dust will be at the field superintendent's discretion.

Dust control will be maintained by keeping traffic on improved roads wherever possible, maintaining the posted speed limit, and applying water for dust suppression as required. Water applied for dust suppression will be applied in such a way as to not cause run-off from the project site. In addition to utilizing water for dust control, decreasing vehicle speed, and reducing the drop height of materials will be utilized to help mitigate fugitive dust. During instances of high winds resulting in excessive dust, additional dust control measures or work stoppage may be implemented. At a minimum, visual monitoring of fugitive dust emissions on a daily basis will be performed during representatively normal operating conditions, and mitigation measures will be implemented as needed.

7.3 STORMWATER POLLUTION PREVENTION

Although a stormwater permit is not required (as disturbance for the RA is under an acre), erosion and sediment control activities and inspections must be in compliance with the Ohio EPA General Stormwater Permit for Construction Activities.

The Contractor field superintendent that will conduct the stormwater inspections will be qualified and have experience in stormwater management and inspections.

Remediation activities will be performed under and are relieved from permitting requirements as stipulated by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Law, Chapter 103, Subchapter I, Section 9621(e). Under CERCLA, air or water permits are not required for remediation system operation; however, substantive requirements of

applicable regulations must be satisfied. The federal based exemptions under Ohio Administrative Code Section 3745-31-03 (B)(2) exempt "Cleanup activities associated with the removal action conducted entirely on site, where such removal action is selected and carried out in compliance with the CERCLA Section 121(e) and where such action meets applicable air pollution emission limits and policies.".

At a minimum, the project will comply with the substantive requirements of the Ohio EPA Authorization for Stormwater Discharges Associated with Construction Activity under the National Pollution Discharge Elimination System per the Ohio Administrative Code Rule 3745-38-02 and will implement Proposed Stormwater Pollution Prevention best management practices in accordance with the rules.

If an excavation fills with rainwater prior to being deemed clean by the excavation confirmation samples, the water will be sent to the fixed-base laboratory for analysis for disposal options. If analytical results are acceptable, the Contractor will discharge the collected runoff to the ground surface following approval by Ohio EPA, USACE, and OHARNG in accordance with local, state, and federal regulations and RVAAP-specific discharge parameters. If the excavation has been confirmed clean by the excavation confirmation samples, water may be discharged to the ground surface on site with prior approval from the Ohio EPA and OHARNG. Clean water release from an excavation area will occur in a vegetated area through a filter sock and be conducted in accordance with Ohio Administrative Code 3745-42-13 (C) and (J).

Storm water that is analyzed and determined to be contaminated will be contained, characterized, and disposed in accordance with local, state, and federal rules, laws, and regulations. In general, stormwater will be managed in accordance with the best management practices for construction activities and the OHARNG Environmental Procedures. The storm water will be collected and pumped directly into labeled, DOT-approved 55-gallon drums or polyethylene tanks and will be stored on secondary containment.

7.4 EQUIPMENT MAINTENENCE

Daily equipment checklists will be completed for heavy equipment and vehicles. Preventive maintenance will be performed on equipment to make sure proper operation and to detect potential

leaks before they occur, and manufacturer's maintenance schedules will be followed. Good housekeeping practices will be maintained during construction activities. Maintenance and fueling activities will be conducted at the equipment laydown area away from stormwater conveyances. Drip trays will be utilized during equipment refueling operations. Operators will not leave equipment refueling operations unattended. Spill kits will be staged near refueling areas in the equipment laydown area.

7.5 TREE REMOVAL

As discussed in SECTION 5.1.2, due to the Northern Long-Eared Bat, tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24 inches above ground) and tree trimming of branches and other parts of the tree that is at least three inches in diameter, will only occur between 1 October and 31 March, outside of the Northern Long-Eared Bat roosting season. Tree removal at the FSA was completed prior to March 31, 2023 and clearing at the FIA will occur early Spring 2024.

8.0 DELIVERABLES

A RACR will be prepared following site activities. The RACR will document the work performed at both FIA and FSA and will include delineation and confirmation sample results and quantities of material removed and replaced. Figures, analytical result tables, photographs, laboratory reports, waste tracker, final manifests, profiles, and notifications will be included in the RACR.

While the remedy at the FIA will achieve unrestricted use there is no need for long-term LUCs respective to chemical contaminants at the FIA.

PAHs will remain at the FSA above the Resident Receptor CUGs. Therefore, a LUC RD will be developed and included in the RACR to present the restrictions to the FSA's land use, activities, RAOs, and LUC requirements. The LUC requirements will include LUC objectives, land use restrictions, site disturbance restrictions, sign specification, potential modification and termination of LUCs, monitoring and reporting requirements, LUC enforcement, and property transfers.

The actions listed below will be described in the LUC RD to achieve the RAOs for the FSA:

1. Prevent Resident Receptor use of the site, as PAHs remain in soil above the United States Environmental Protection Agency Resident Soil Regional Screening Levels.
2. Prevent intrusive and digging activities deeper than surface soil (0 to 1 foot bgs) and coordinate intrusive activities with the facility.
3. Install signs to enhance compliance with digging restrictions at the site.
4. Maintain the LUC training program.
5. Perform annual inspections to verify land use.

A schedule outlining the order and timeframe of deliverables is included in the Project Management Plan (PIKA-Insight, 2023). A preliminary draft, draft, and final versions of deliverables will be prepared. The preliminary draft will be submitted to the Army only, while the draft deliverables will be submitted to the Army and Ohio EPA for review and comments. The final deliverables will be submitted to the USACE, the Ohio EPA, and Chenega Services for their records.

9.0 REFERENCES

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FIGURES

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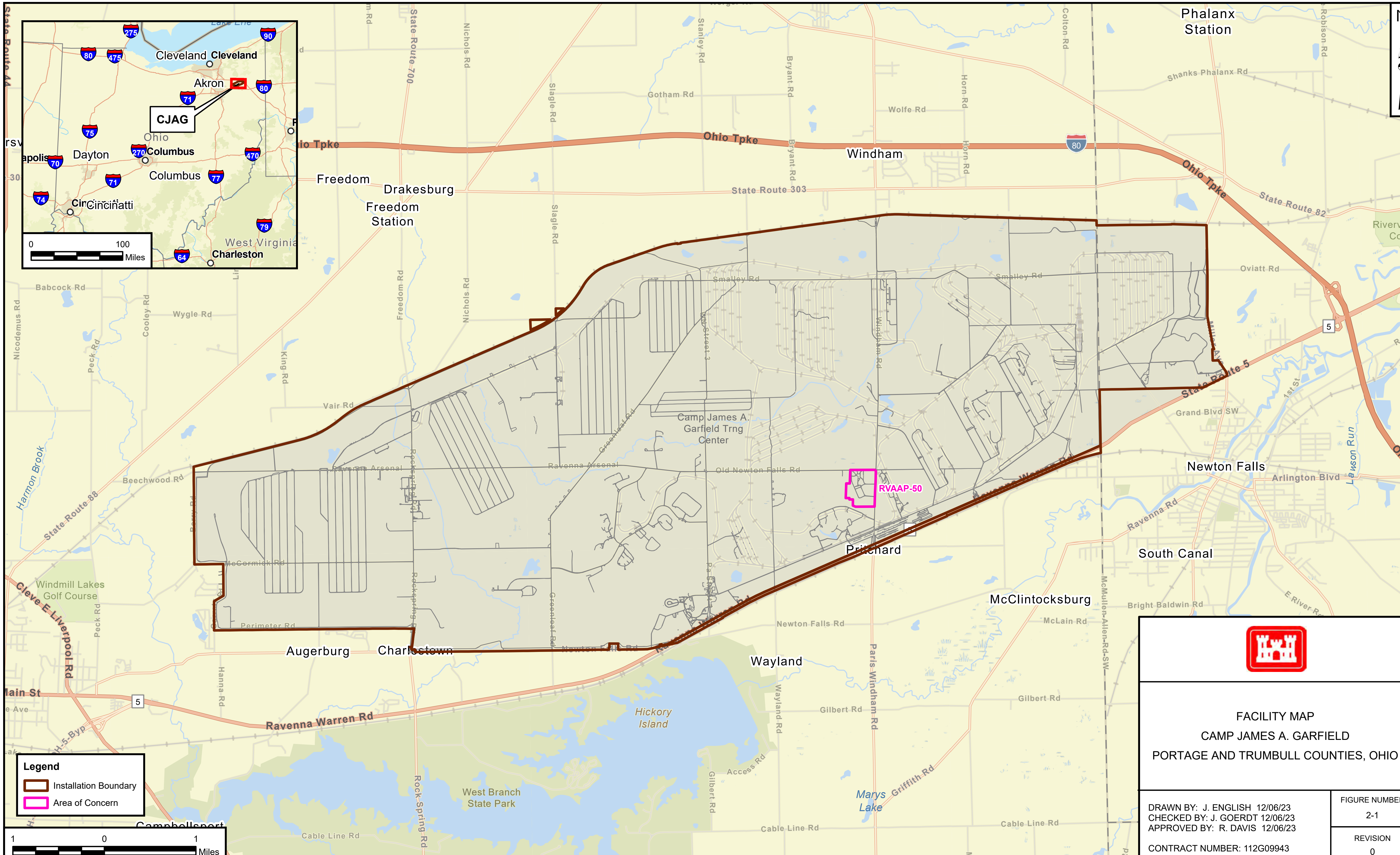


Cleveland
Akron
CJAG
Dayton
Ohio
Columbus
Cincinnati
West Virginia
Charleston
0
100
Miles
Phalanx Station
Windham
Freedom
Drakesburg
Freedom Station
Ohio Tpke
State Route 303
State Route 82
State Route 5
State Route 88
Camp James A. Garfield Trng Center
RVAAP-50
Newton Falls
South Canal
Pritchard
McClintocksburg
Augerburg
Charlestown
Wayland
Hickory Island
West Branch State Park
Marys Lake
Windmill Lakes Golf Course
Ravenna Warren Rd
Legend
Installation Boundary
Area of Concern
1
0
1
Miles
N

FACILITY MAP

CAMP JAMES A. GARFIELD

PORTAGE AND TRUMBULL COUNTIES, OHIO

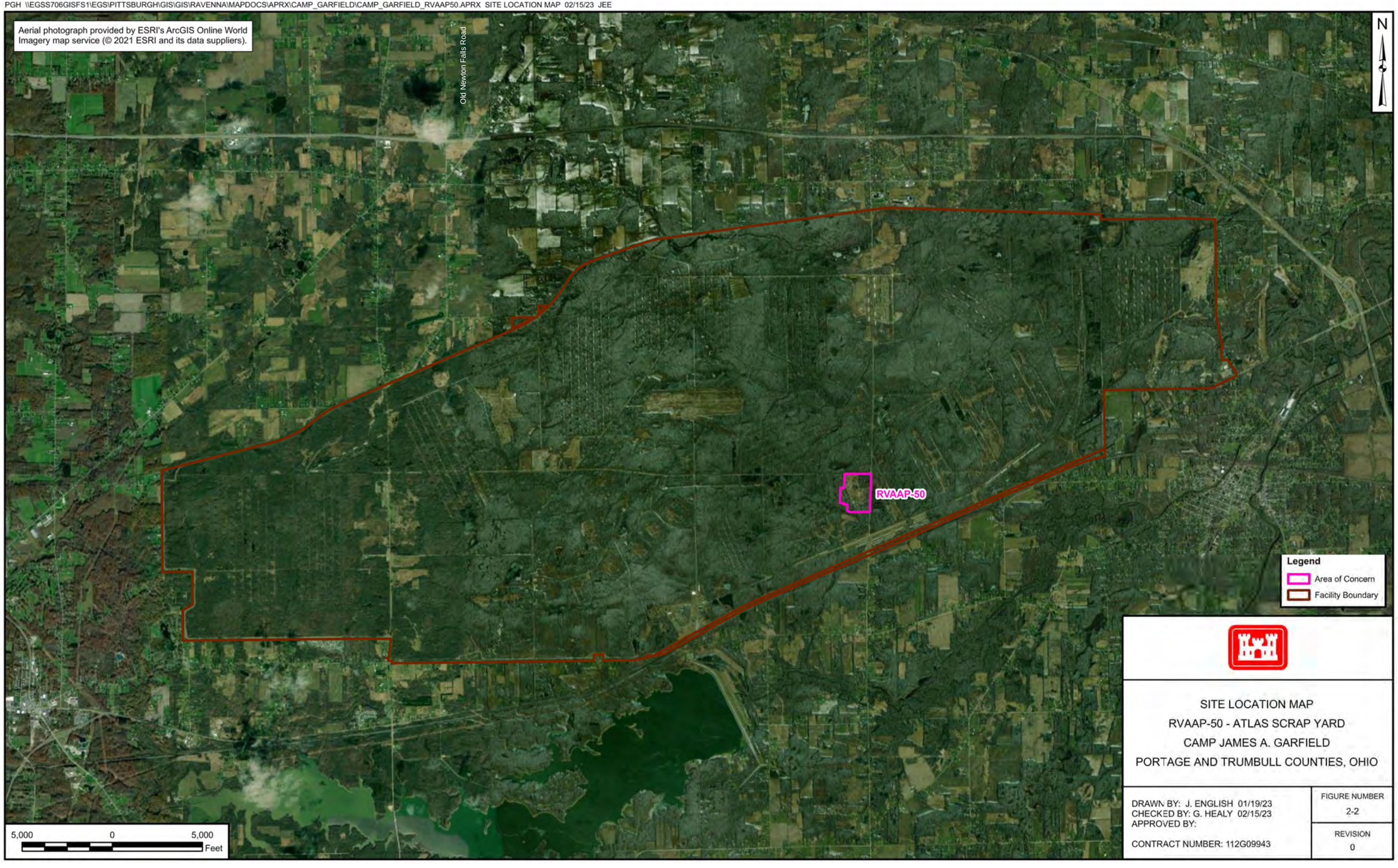
DRAWN BY: J. ENGLISH 12/06/23
CHECKED BY: J. GOERDT 12/06/23
APPROVED BY: R. DAVIS 12/06/23

CONTRACT NUMBER: 112G09943

FIGURE NUMBER 2-1

REVISION 0

PGH \\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX SITE LOCATION MAP 02/15/23 JEE



SITE LOCATION MAP
RVAAP-50 - ATLAS SCRAP YARD
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

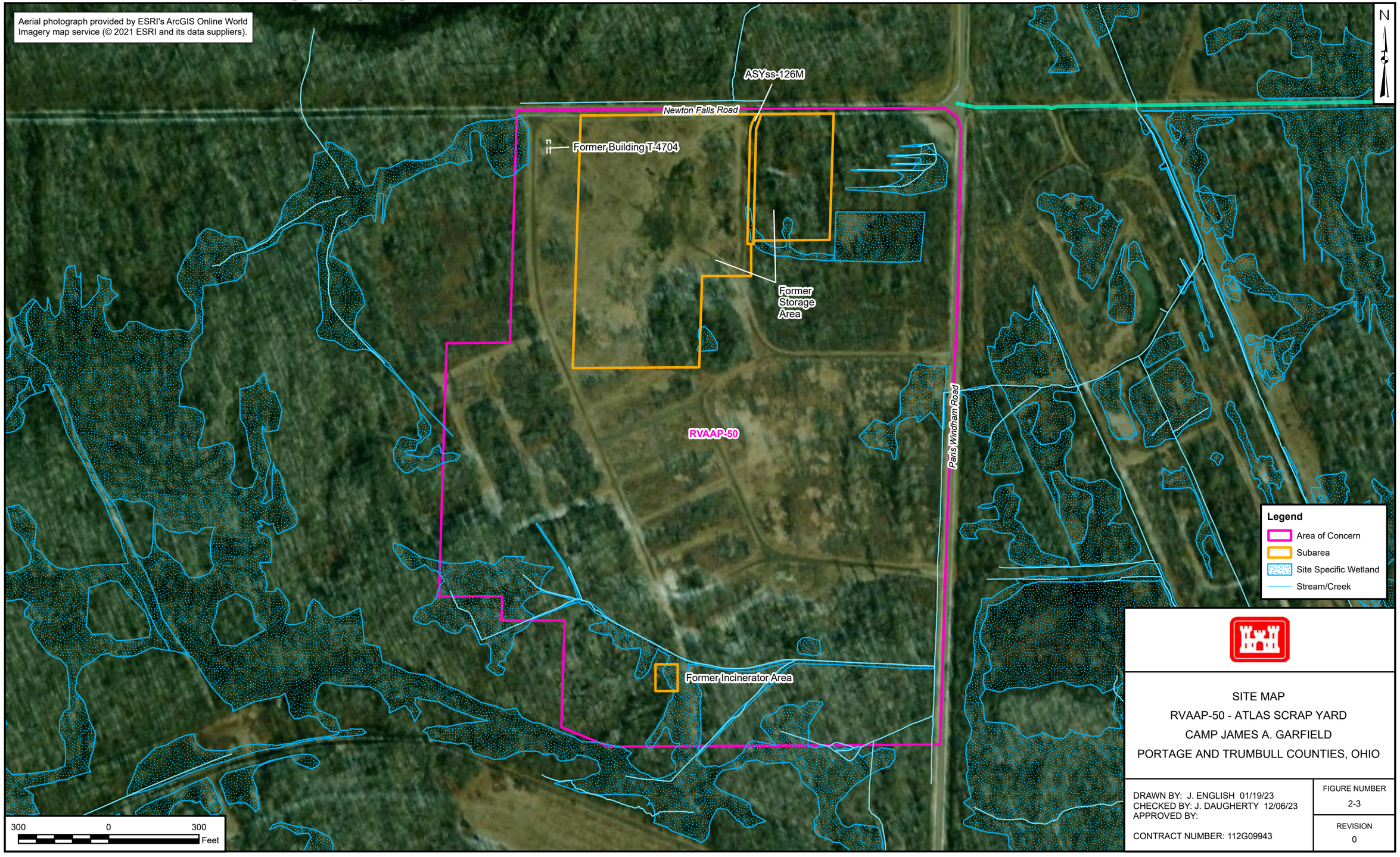
DRAWN BY: J. ENGLISH 01/19/23
CHECKED BY: G. HEALY 02/15/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER
2-2

REVISION
0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX SITE MAP 12/06/23 JEE



SITE MAP
RVAAP-50 - ATLAS SCRAP YARD
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 01/19/23
CHECKED BY: J. DAUGHERTY 12/06/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER
2-3

REVISION
0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FSA SITE LAYOUT MAP 02/20/23 JEE

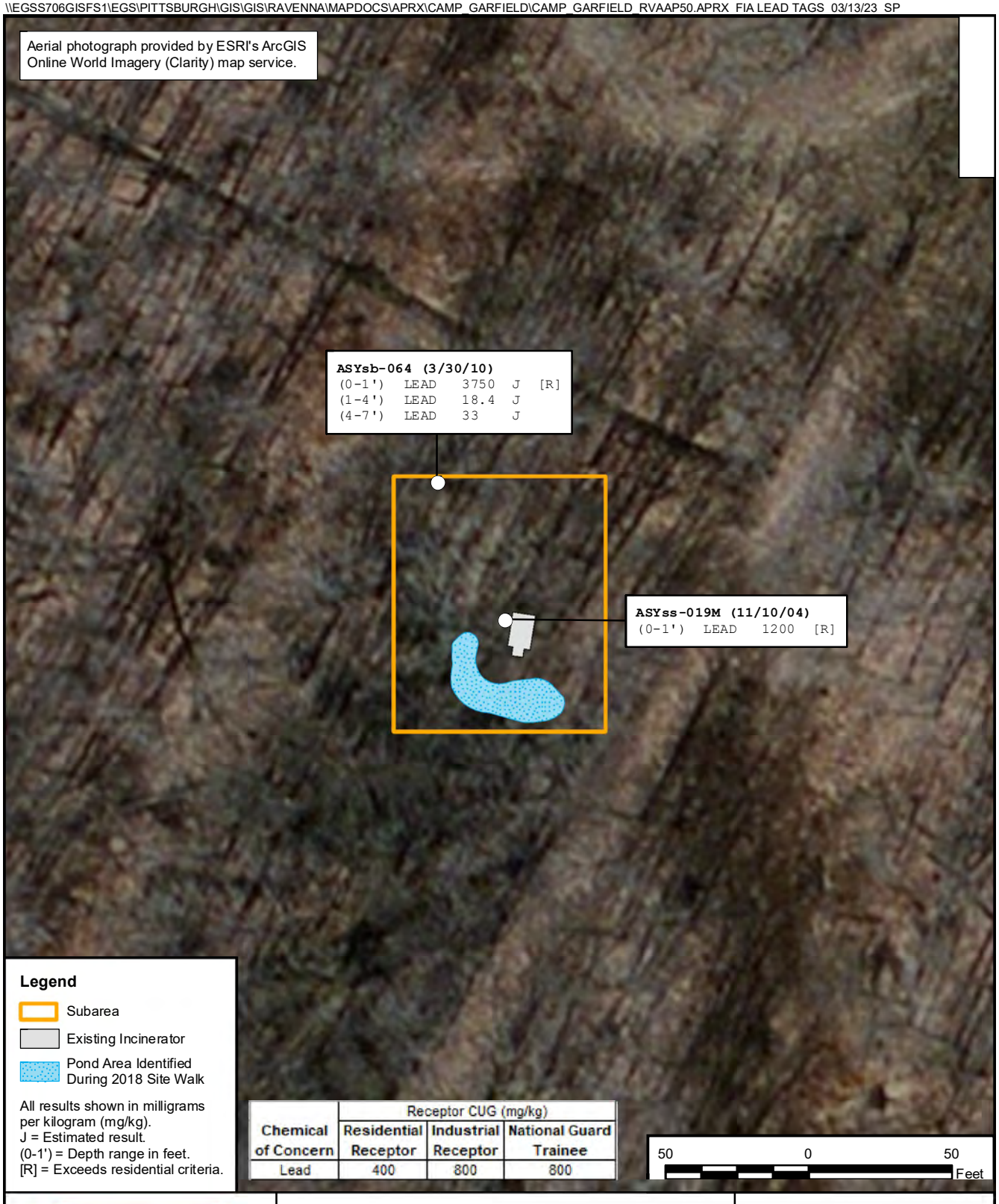
FSA EXCAVATION AREA
RVAAP-50 - ATLAS SCRAP YARD
FORMER STORAGE AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 02/06/23
CHECKED BY: G. HEALY 02/20/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER	REV
2-4	0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FIA LEAD TAGS 03/13/23 SP



Chemical of Concern	Receptor CUG (mg/kg)		
	Residential Receptor	Industrial Receptor	National Guard Trainee
Lead	400	800	800

FIA LEAD SAMPLE RESULTS
RVAAP-50 - ATLAS SCRAP YARD
FORMER INCINERATOR AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

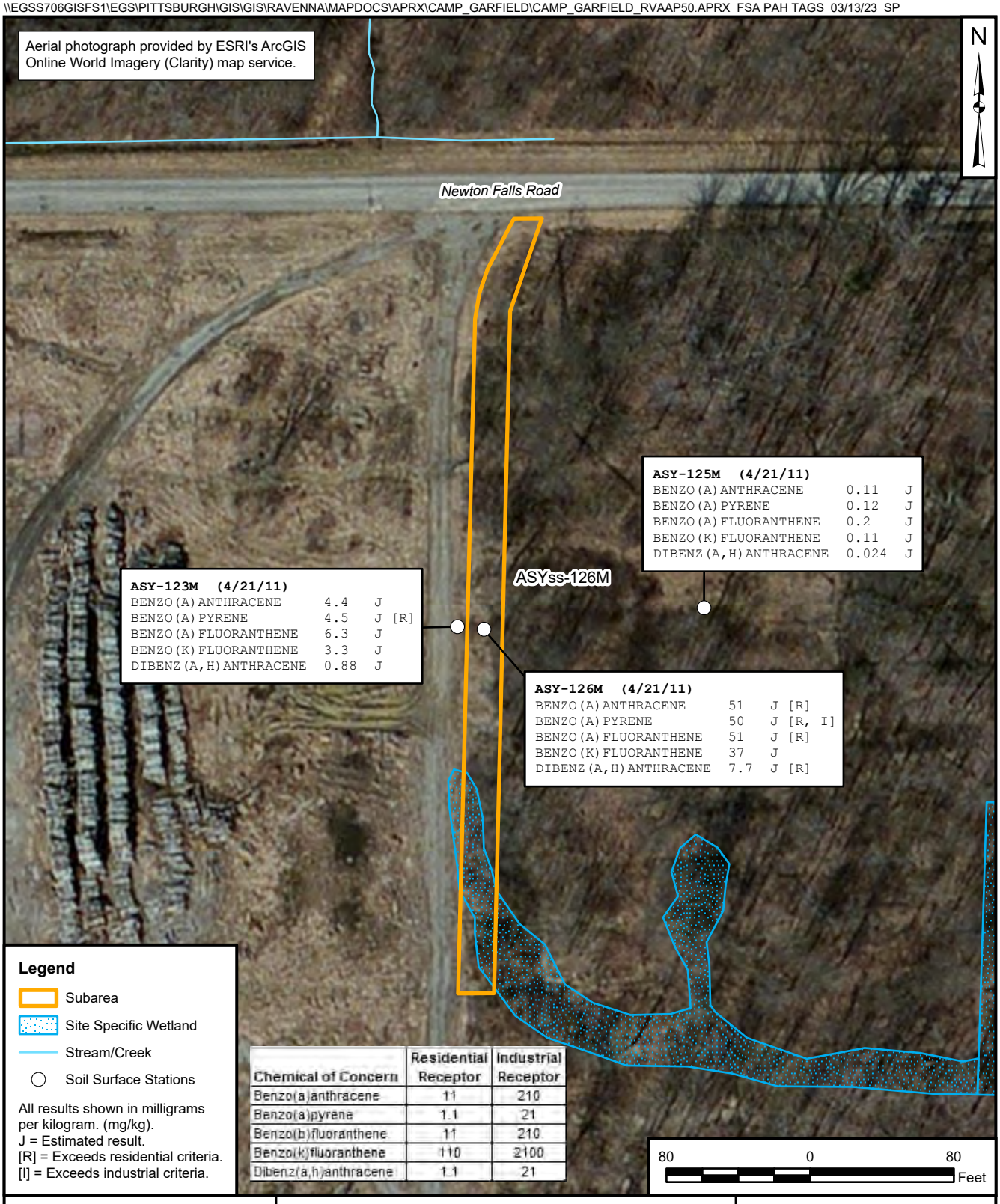
DRAWN BY: J. ENGLISH 01/19/23
CHECKED BY: G. HEALY 03/13/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER 4-1

REV 0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FSA PAH TAGS 03/13/23 SP



Chemical of Concern	Residential Receptor	Industrial Receptor
Benzo(a)anthracene	11	210
Benzo(a)pyrene	1.1	21
Benzo(b)fluoranthene	11	210
Benzo(k)fluoranthene	110	2100
Dibenz(a,h)anthracene	1.1	21

FSA PAH SAMPLE RESULTS
RVAAP-50 - ATLAS SCRAP YARD
FORMER STORAGE AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

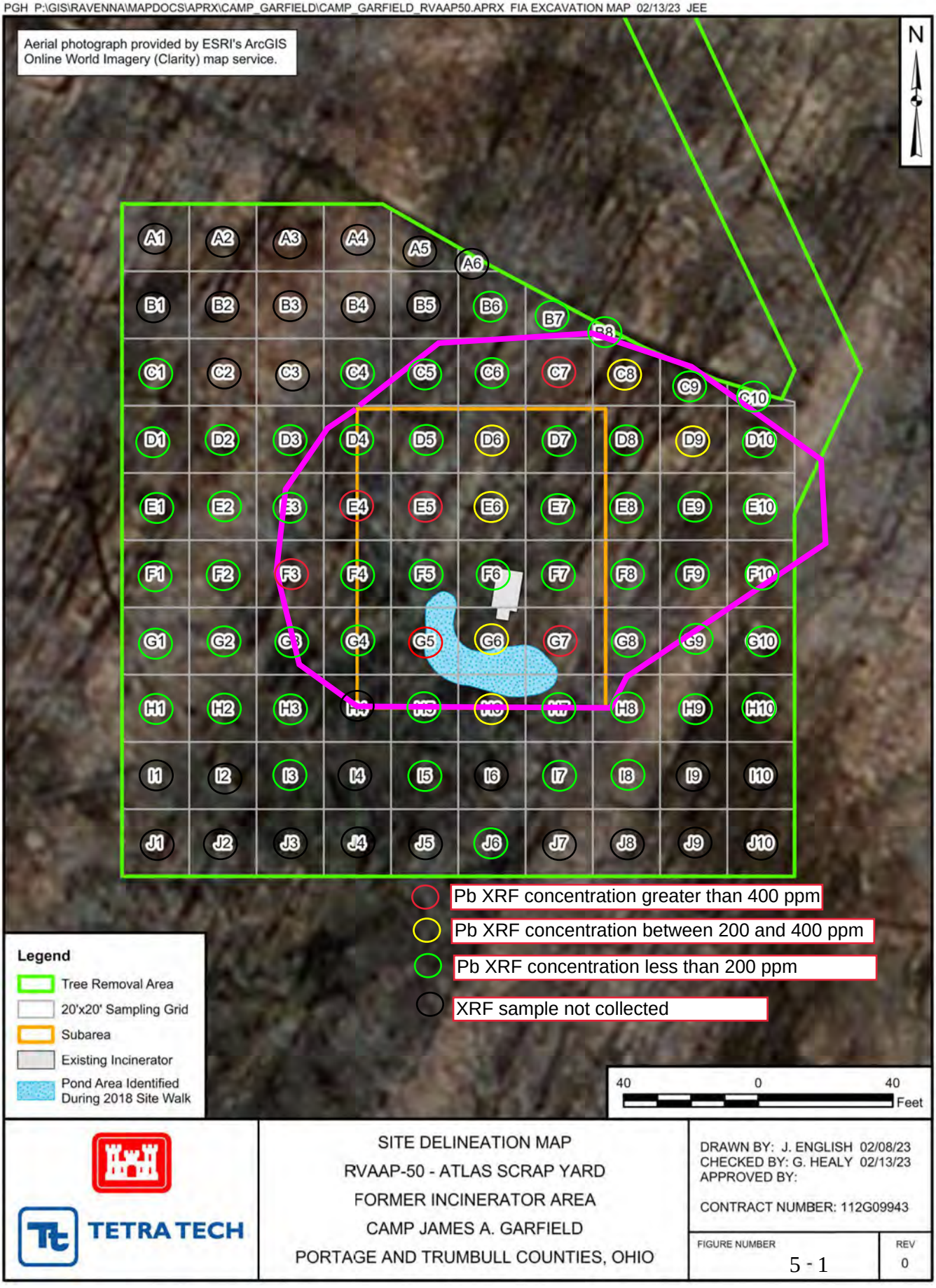
DRAWN BY: J. ENGLISH 01/19/23
CHECKED BY: G. HEALY 03/13/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER 4-2

REV 0

PGH P:\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FIA EXCAVATION MAP 02/13/23 JEE



TETRA TECH

SITE DELINEATION MAP
RVAAP-50 - ATLAS SCRAP YARD
FORMER INCINERATOR AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

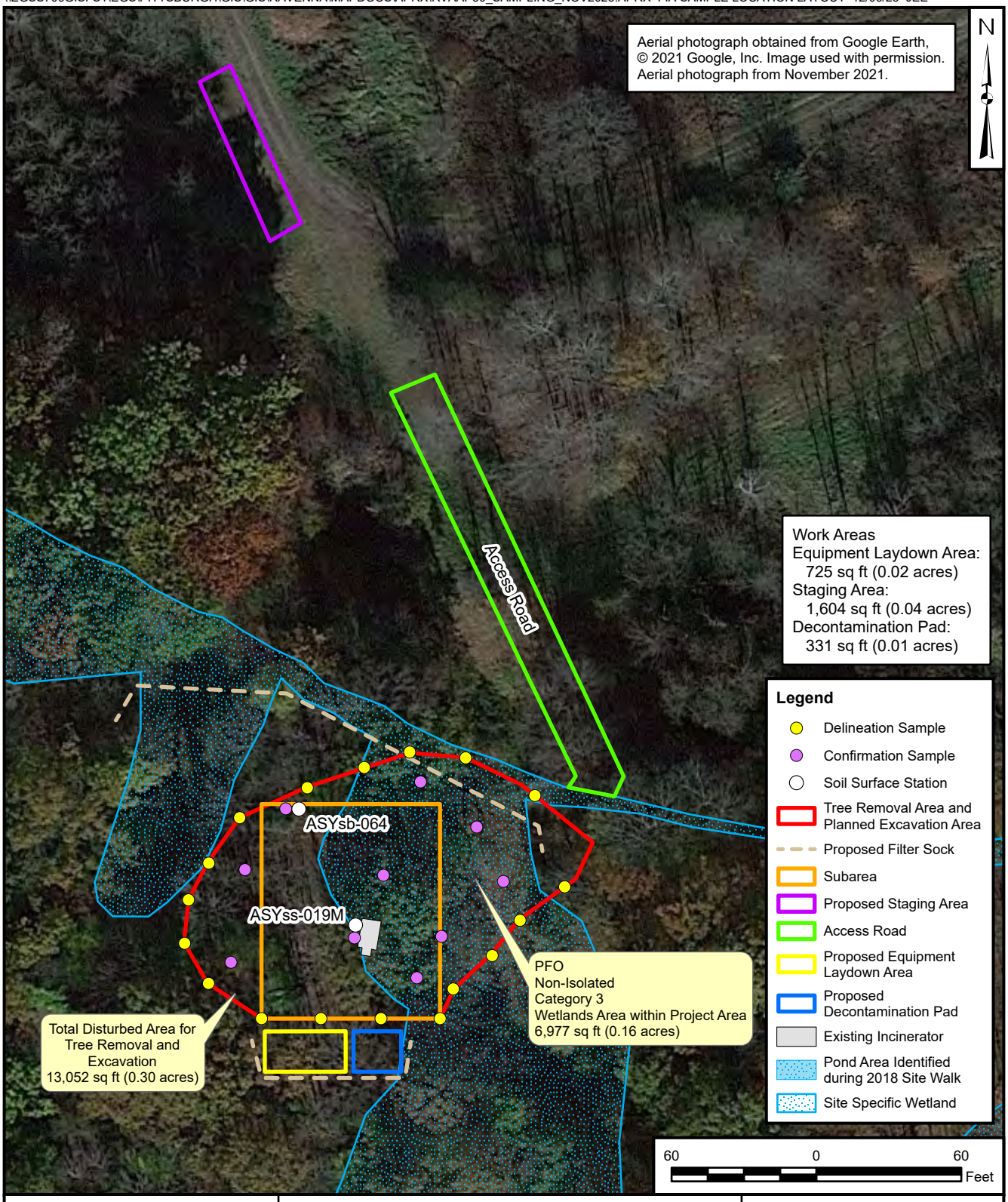
DRAWN BY: J. ENGLISH 02/08/23
CHECKED BY: G. HEALY 02/13/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER 5 - 1

REV 0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\RVAAP50_SAMPLING_NOV2023.APRX FIA SAMPLE LOCATION LAYOUT 12/06/23 JEE



FIA SITE LAYOUT MAP
RVAAP-50 - ATLAS SCRAP YARD
FORMER INCINERATOR AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 11/14/23
CHECKED BY: J. GOERDT 12/06/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER	REV
5-2	0

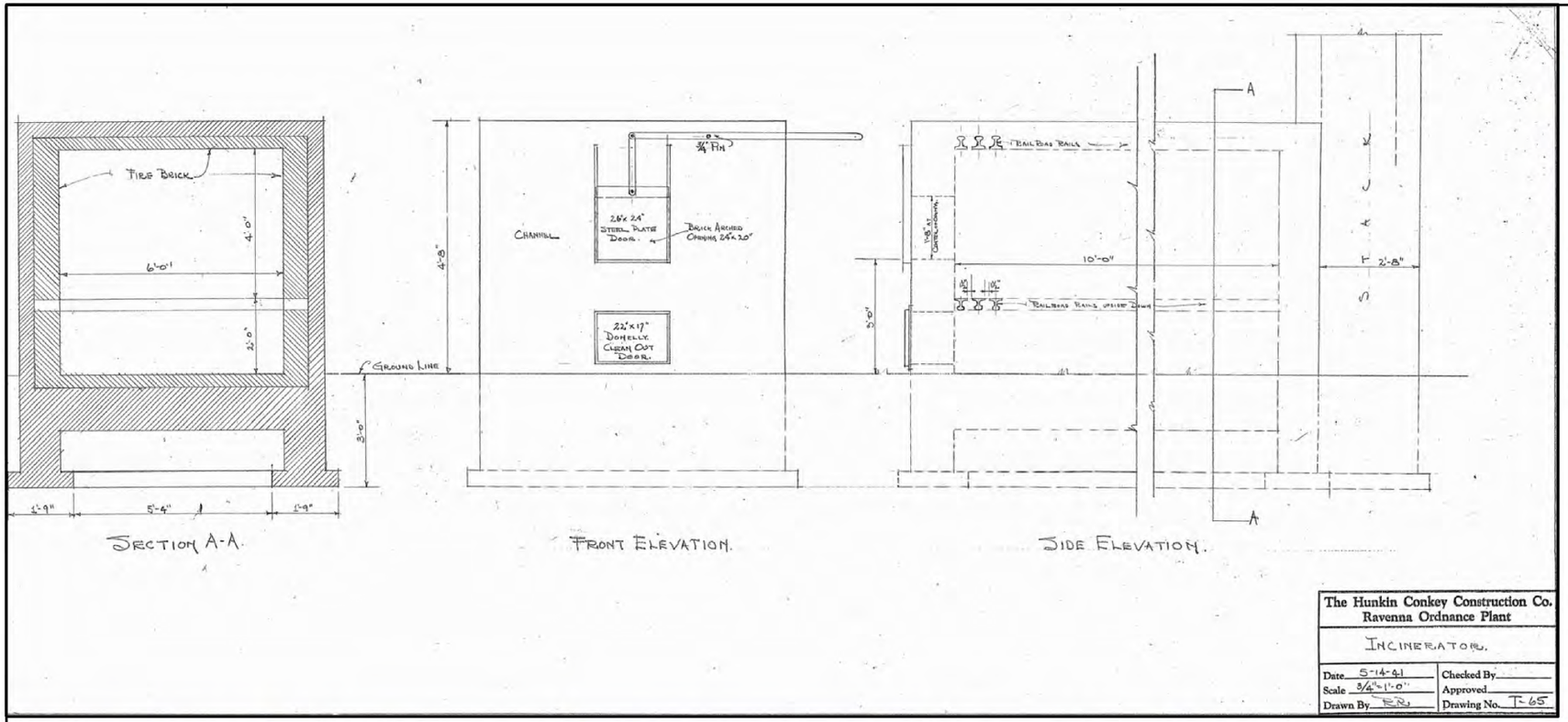


PHOTO FACING INCINERATOR
LOOKING WEST

FACING INCINERATOR LOOKING NORTH

FACING INCINERATOR

Note: The tree adjacent to the incinerator on the west side is approximately 32-inches in diameter.

INSIDE CHANNEL FROM MAIN DOOR

Note: The material beneath the grate in the channel has not been sampled.

INTERIOR CEILING

DONELLY CLEANOUT DOOR

Note: The metal debris, including the cleanout door and steel plate door, are on the ground surface in front of the channel opening.

STEEL PLATE DOOR - BURIED

GENERAL NOTES:

1. PHOTOS WERE TAKEN IN MAY 2018.
2. THE INTERIOR AND EXTERIOR BRICK WAS SAMPLED FOR ACM, PCBs, AND TCLP METALS.

US Army Corps of Engineers Louisville District

leidos

ATLAS SCRAP YARD
FORMER RVAAP/CAMP JAMES A. GARFIELD
PORTAGE & TRUMBULL COUNTIES OHIO

DRAWN BY:	REV. NO./DATE:	CAD FILE:C:\08042\DWGS
P. HOLM	9/24/20	R25-ASY-FIG4

Figure 5-2A. Incinerator Design Drawing

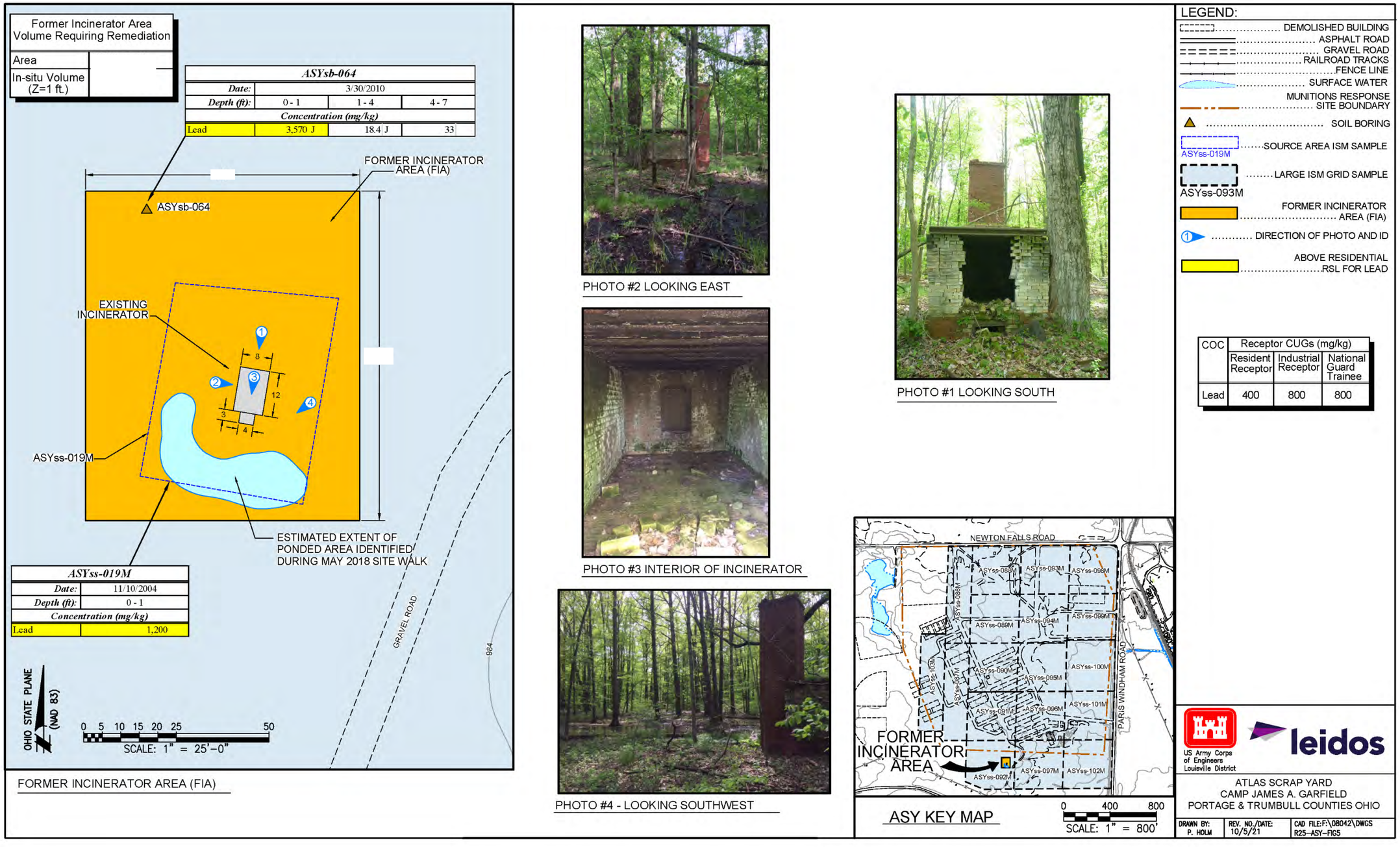
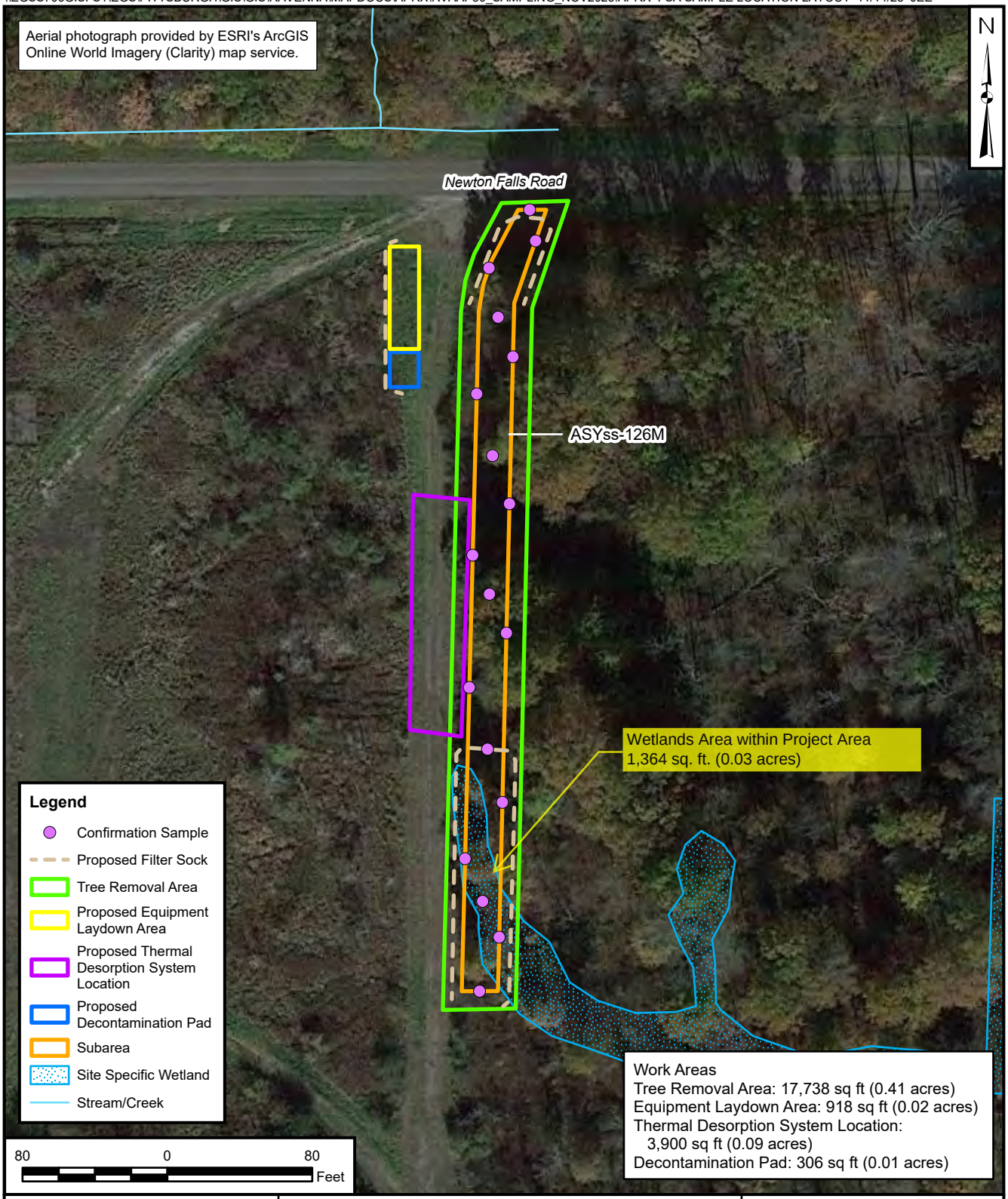


Figure 5-2B. Incinerator Location and Photos

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\RVAAP50_SAMPLING_NOV2023.APRX FSA SAMPLE LOCATION LAYOUT 11/14/23 JEE



TETRA TECH

FSA SITE LAYOUT MAP
RVAAP-50 - ATLAS SCRAP YARD
FORMER STORAGE AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 11/14/23
CHECKED BY: J. GOERDT 11/14/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER	REV
5-3	0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\RVAAP50_TRAFFIC_PLAN_MAR2024.APRX RVAAP-50 TRAFFIC PLAN LAYOUT 03/04/24 JEE

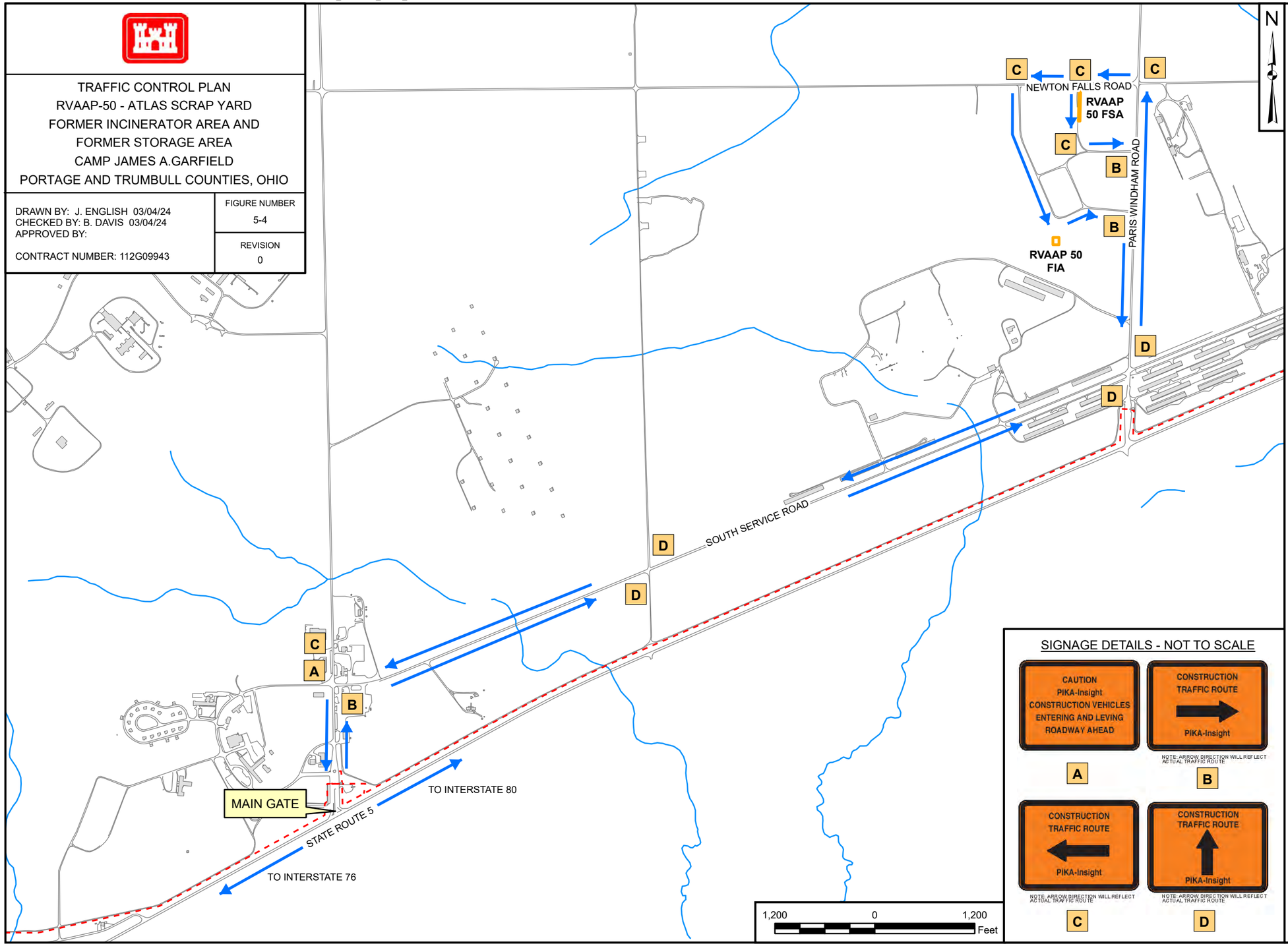
TRAFFIC CONTROL PLAN
RVAAP-50 - ATLAS SCRAP YARD
FORMER INCINERATOR AREA AND
FORMER STORAGE AREA
CAMP JAMES A.GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 03/04/24
CHECKED BY: B. DAVIS 03/04/24
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER
5-4

REVISION
0



LEGEND

- TRUCK TRAFFIC ARROW
- BUILDING
- ROAD
- FENCE
- STREAM

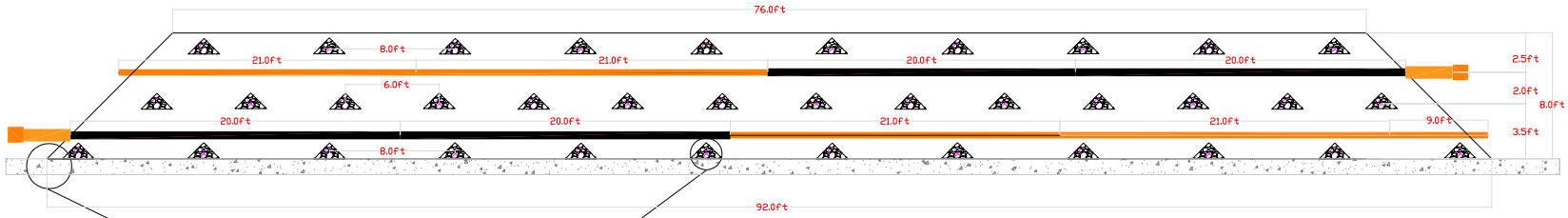
Projection: NAD 1983 SPCS Ohio North (Feet).

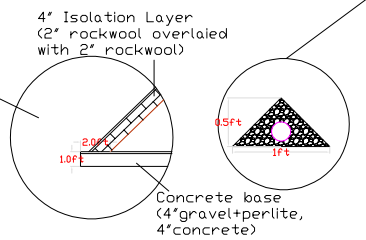
NOTES:

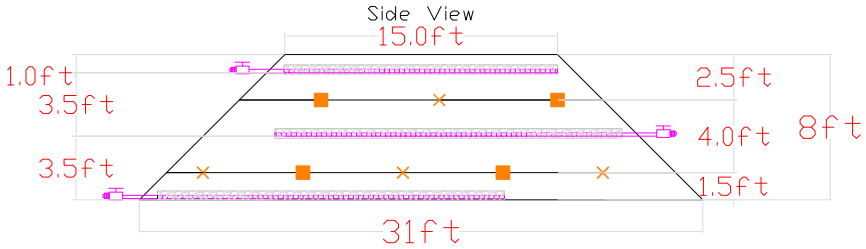
1. ALL VEHICLES MUST ENTER CJAG THROUGH THE MAIN GATE (8451 STATE ROUTE 5, RAVENNA, OHIO).
2. ALL VEHICLES AND CONTENTS ARE SUBJECT TO SEARCH AND INSPECTION.
3. NO WEAPONS, LIGHTERS OR SIMILAR FIRE STARTERS, OR ALCOHOL ARE PERMITTED ONSITE. PROHIBITED ITEMS MAY BE LEFT WITH SECURITY WHILE ONSITE. SECURITY WILL CONFISCATE ANY PROHIBITED ITEMS DISCOVERED DURING INSPECTIONS.
4. ALL PERSONNEL ENTERING CJAG MUST COMPLETE THE OHARNG SECURITY ACCESS FORM AND SUBMIT IT TO TETRA TECH/INSIGHT ENVIRONMENTAL FOR COORDINATION FOR ACCESS TO THE FACILITY TO COORDINATE WITH THE OHARNG WHO WILL APPROVE ALL ACCESS TO THE FACILITY. ACCESS MUST BE COORDINATED AT LEAST 48 HOURS IN ADVANCE. ALL WEEKEND AND HOLIDAY WORK MUST BE APPROVED BY THE OHARNG.
5. ALL ON-ROAD HAUL TRUCKS WILL ADHERE TO ODOT TRANSPORTATION GUIDELINES. THE SUBCONTRACTOR IS RESPONSIBLE FOR ENSURING AND VERIFYING TRUCKS DO NOT EXCEED 80,000 POUNDS GROSS WEIGHT.
6. ALL HAUL TRUCKS WILL HAVE OPERATIONAL LOAD COVERS IN GOOD CONDITION (I.E., FREE OF HOLES, TEARS). LOADS WILL BE COVERED PRIOR TO DEPARTING THE PROJECT AREAS AND WILL STAY IN PLACE UNTIL UNLOADING AT THE APPROVED DISPOSAL SITE.
7. ON-ROAD HAUL TRUCKS HAULING WASTE SHALL BE LINED IN ACCORDANCE WITH THE APPROVED DISPOSAL FACILITY REQUIREMENTS.
8. ROADS SHALL NOT BE BLOCKED. TRAFFIC SHALL BE MAINTAINED ON AT LEAST ONE HALF OF THE ROADWAY WIDTH AT ALL TIMES.
9. SUBCONTRACTOR SHALL CONFIRM NO OVERHEAD HAZARDS (I.E., POWER LINES), MANHOLES, AND WATER VALVES WILL IMPEDE REMEDIAL ACTIVITIES.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY DAMAGES TO ROADS AS A RESULT OF HIS OR HER SUBCONTRACTORS' ACTIONS.

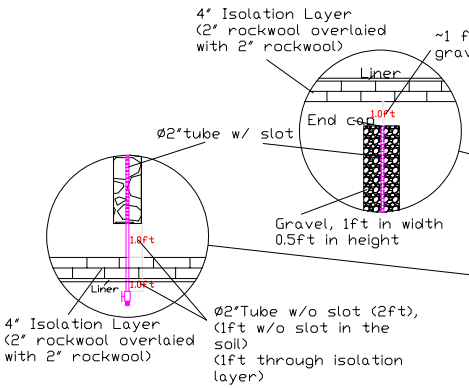
SIGNAGE DETAILS - NOT TO SCALE

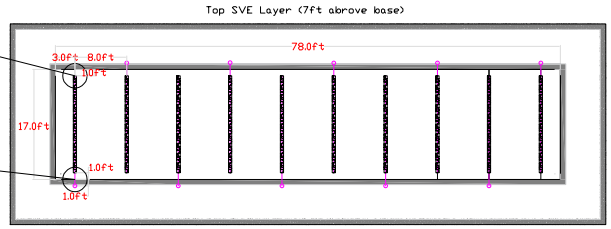
Side View

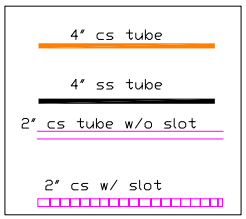


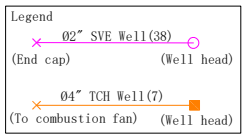


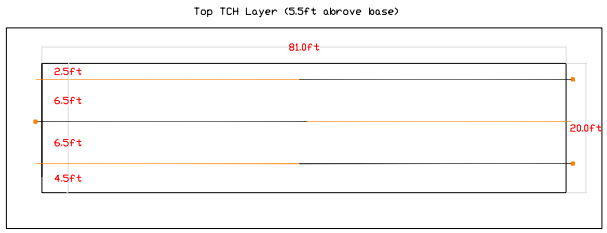


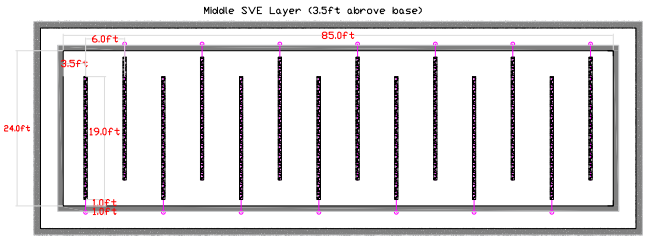


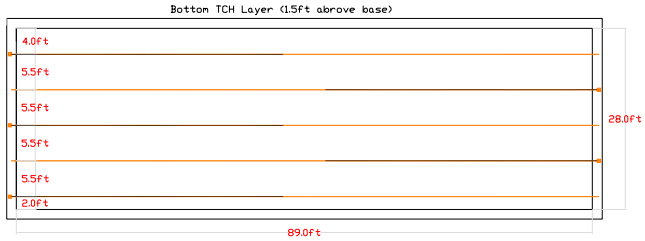


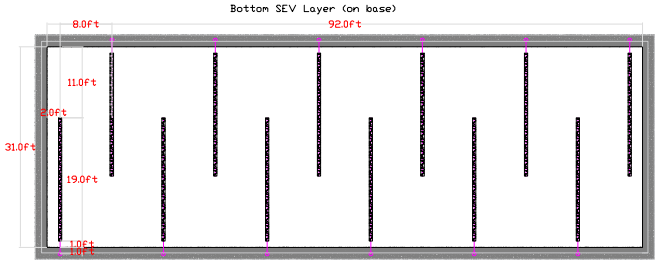












Well Type		Quantity	Total Length(ft)	Length in the Soil (ft)	Slot(ft)
SVE	Top	10	17	16	15
	Middle	14	21	20	19
	Bottom	12	21	20	19
CH	Top	3	82	81	-
	Middle	5	91	89	-

Steel Materials	#	Note
10ft 4" SS tube	16	16 tubes (8 tubes connects to well head, followed by 8 tubes)
21ft 4" CS tube	19	16 whole tubes; 3 tubes cut into five 9ft
21ft 2" CS tube	36	26x whole tube (19ft slot w/ endcap); 10x cut into 17ft tube (15ft slot w/ endcap)
TCH wellhead	8	
SVE wellhead w/valve	36	

Figure 5-5: Pile View

Ravenna Ohio - EPTD

APPROVED	DATE
DRAWN RZ	3/12/24
CHKD XC	3/12/24
APVD XC	3/12/24

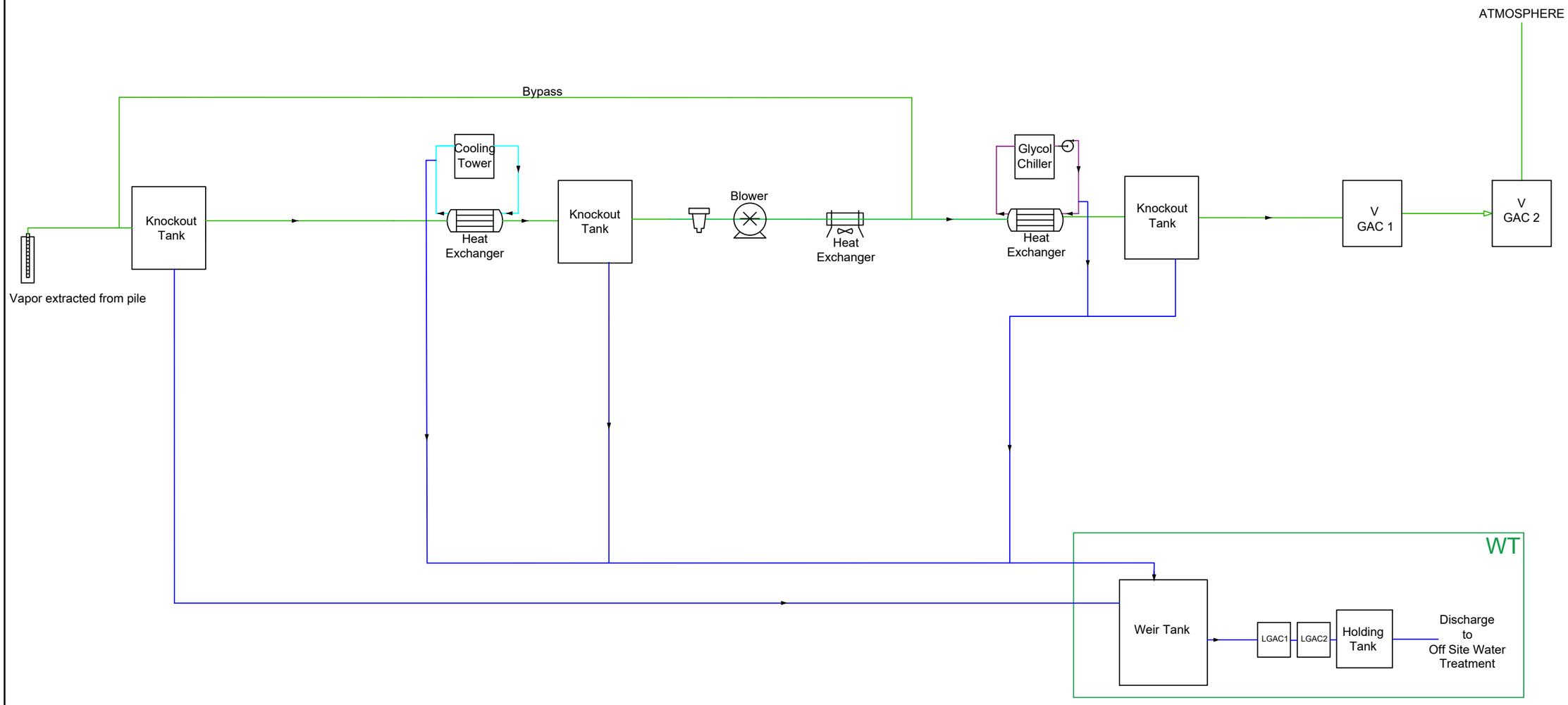
GEO Environmental Remediation Company

1500 W KATELLA AVE
ORANGE, CA 92867

TITLE

SIZE | Project

SCALE | UNITS: FEET & INCHES | SHEET 1 OF 1



LEGEND

- VAPOR FLOW
- WATER LINES
- CHILLER CYCLE
- COOLING WATER
- BLOWER
- AIR TO AIR HEAT EXCHANGER
- FILTER WITH 5 MICRON PAPER ELEMENT
- WATER HEAT EXCHANGER
- CENTRIFUGAL PUMP

APPROVED	DATE
DRAWN CZ	07/26/2023
CHKD	
APVD	

GEO Environmental Remediation Company
1500 W KATELLA AVE
ORANGE, CA 92867

TITLE: Process Flow Diagram

SIZE: 11X17 | Project.

SCALE: NTS | UNITS: FEET & INCHES | SHEET 1 OF 1

Figure 5-6

APPENDIX A

ACCIDENT PREVENTION PLAN / SITE SAFETY AND HEALTH PLAN

(Under Separate Cover)

APPENDIX B

LABORATORY CERTIFICATIONS

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

ALS - Middletown

301 Fulling Mill Road, Middletown, PA 17057

(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017) General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.3 May 2019 and is accredited is accordance with the

United States Department of Defense
Environmental Laboratory Accreditation Program
(DoD-ELAP)

This accreditation demonstrates technical competence for the defined scope:

Environmental Testing

(As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
August 22, 2017	December 17, 2021	February 29, 2024

Accreditation No.:	*Certificate No.:*
74618	L21-781

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 218.6	IC	Hexavalent Chromium
Aqueous	EPA 410.4	Colorimetric	Chemical Oxygen Demand (COD)
Aqueous	EPA 5540C	Spectrophotometric	MBAS (Surfactants)
Aqueous	EPA 245.1	CVAA	Mercury
Aqueous	EPA 1631E	CVAFS	Mercury
Aqueous	Kelada-01	Spectrophotometric	Amenable Cyanide
Aqueous	Kelada-01	Spectrophotometric	Total Cyanide
Aqueous	SM2130B	Turbidimetric	Turbidity
Aqueous	EPA 7470A	CVAA	Mercury
Aqueous	EPA 8011	GC-ECD	1,2-Dibromo-3-Chloropropane (DBCP)
Aqueous	EPA 8011	GC-ECD	1,2-Dibromoethane (EDB)
Aqueous	EPA 8011	GC-ECD	1,2,3-Trichloropropane
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Ethanol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Ethyl Acetate
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Ethylene Glycol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Isoamyl Alcohol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Isobutyl Alcohol (2 methyl-1-propanol)
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Isopropyl Alcohol (2-propanol) (Isopropanol)
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Methanol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Methyl Ethyl Ketone (2-butanone)
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Methyl Isobutyl Ketone (MIBK)
Aqueous	EPA 8015C, EPA 8015D	GC/FID	n-Butanol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	n-Propanol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	Propylene Glycol
Aqueous	EPA 8015C, EPA 8015D	GC/FID	tert-Butyl Alcohol
Aqueous	EPA 8260C, EPA 8260D	GC/MS	2-Chloroethylvinylether
Aqueous	EPA 9040C	Electrode	pH, Corrosivity, Hydrogen Ion
Aqueous	EPA 9050A	Probe	Specific Conductance
Aqueous	EPA 9060A, SM5310B-2000	Combustion	Total Organic Carbon
Aqueous	RSK 175	GC-FID	Methane, Ethane, and Ethene
Aqueous	SM 2320B	Titrimetric	Alkalinity
Aqueous	SM 2540C	Gravimetric	Total Dissolved Solids
Aqueous	SM 2540D	Gravimetric	Total Suspended Solids
Aqueous	SM 3500 Fe B	Colorimetric	Ferrous Iron
Aqueous	SM 4500-S2 F	Titrimetric	Sulfide
Aqueous	SM 5210B	Probe	Biochemical Oxygen Demand (BOD)

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	SM 5210B	Probe	Carbonaceous BOD (CBOD)
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Aluminum
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Antimony
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Arsenic
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Barium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Beryllium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Cadmium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Calcium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Chromium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Cobalt
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Copper
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Iron
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Lead
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Magnesium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Manganese
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Molybdenum
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Nickel
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Potassium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Selenium
Aqueous	EPA 200.7	ICP/ ICP-MS	Silica as SiO2
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Silver
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Sodium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Strontium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Thallium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Tin
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Titanium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Vanadium
Aqueous	EPA 200.7, EPA 200.8	ICP/ ICP-MS	Zinc
Aqueous	EPA 522	GC/MS	1,4-Dioxane
Aqueous	EPA 608.3	GC/ECD	Aldrin
Aqueous	EPA 608.3	GC/ECD	Alpha-BHC
Aqueous	EPA 608.3	GC/ECD	Beta-BHC
Aqueous	EPA 608.3	GC/ECD	Delta-BHC
Aqueous	EPA 608.3	GC/ECD	Gamma-BHC (Lindane)
Aqueous	EPA 608.3	GC/ECD	Chlordane
Aqueous	EPA 608.3	GC/ECD	Alpha-Chlordane

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 608.3	GC/ECD	Gamma-Chlordane
Aqueous	EPA 608.3	GC/ECD	4-4'-DDD
Aqueous	EPA 608.3	GC/ECD	4-4'-DDE
Aqueous	EPA 608.3	GC/ECD	4-4'-DDT
Aqueous	EPA 608.3	GC/ECD	Dieldrin
Aqueous	EPA 608.3	GC/ECD	Endosulfan I
Aqueous	EPA 608.3	GC/ECD	Endosulfan II
Aqueous	EPA 608.3	GC/ECD	Endosulfan Sulfate
Aqueous	EPA 608.3	GC/ECD	Endrin
Aqueous	EPA 608.3	GC/ECD	Endrin Aldehyde
Aqueous	EPA 608.3	GC/ECD	Endrin Ketone
Aqueous	EPA 608.3	GC/ECD	Heptachlor
Aqueous	EPA 608.3	GC/ECD	Heptachlor Epoxide
Aqueous	EPA 608.3	GC/ECD	Methoxychlor
Aqueous	EPA 608.3	GC/ECD	Mirex
Aqueous	EPA 608.3	GC/ECD	Toxaphene
Aqueous	EPA 608.3	GC/ECD	PCB-1016
Aqueous	EPA 608.3	GC/ECD	PCB-1221
Aqueous	EPA 608.3	GC/ECD	PCB-1232
Aqueous	EPA 608.3	GC/ECD	PCB-1242
Aqueous	EPA 608.3	GC/ECD	PCB-1248
Aqueous	EPA 608.3	GC/ECD	PCB-1254
Aqueous	EPA 608.3	GC/ECD	PCB-1260
Aqueous	EPA 608.3	GC/ECD	PCB-1262
Aqueous	EPA 608.3	GC/ECD	PCB-1268
Aqueous	EPA 624.1	GC/MS	Benzene
Aqueous	EPA 624.1	GC/MS	Bromobenzene
Aqueous	EPA 624.1	GC/MS	Bromochloromethane
Aqueous	EPA 624.1	GC/MS	Bromodichloromethane
Aqueous	EPA 624.1	GC/MS	Bromoform
Aqueous	EPA 624.1	GC/MS	n-Butylbenzene
Aqueous	EPA 624.1	GC/MS	Sec-Butylbenzene
Aqueous	EPA 624.1	GC/MS	Tert-Butylbenzene
Aqueous	EPA 624.1	GC/MS	Carbon tetrachloride
Aqueous	EPA 624.1	GC/MS	Chlorobenzene
Aqueous	EPA 624.1	GC/MS	Chloroform

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 624.1	GC/MS	2-Chlorotoluene (o)
Aqueous	EPA 624.1	GC/MS	4-Chlorotoluene (p)
Aqueous	EPA 624.1	GC/MS	Dibromochloromethane
Aqueous	EPA 624.1	GC/MS	1,2-Dibromo-3-chloropropane
Aqueous	EPA 624.1	GC/MS	1,2-Dibromoethane (EDB)
Aqueous	EPA 624.1	GC/MS	Dibromomethane
Aqueous	EPA 624.1	GC/MS	1,2-Dichlorobenzene
Aqueous	EPA 624.1	GC/MS	1,3-Dichlorobenzene
Aqueous	EPA 624.1	GC/MS	1,4-Dichlorobenzene
Aqueous	EPA 624.1	GC/MS	1,1-Dichloroethene
Aqueous	EPA 624.1	GC/MS	Cis-1,2-Dichloroethene
Aqueous	EPA 624.1	GC/MS	Trans-1,2-Dichloroethene
Aqueous	EPA 624.1	GC/MS	1,2-Dichloropropane
Aqueous	EPA 624.1	GC/MS	1,3-Dichloropropane
Aqueous	EPA 624.1	GC/MS	2,2-Dichloropropane
Aqueous	EPA 624.1	GC/MS	1,1-Dichloropropene
Aqueous	EPA 624.1	GC/MS	Cis-1,3-Dichloropropene
Aqueous	EPA 624.1	GC/MS	Trans-1,3-Dichloropropene
Aqueous	EPA 624.1	GC/MS	Ethylbenzene
Aqueous	EPA 624.1	GC/MS	Hexachlorobutadiene
Aqueous	EPA 624.1	GC/MS	Isopropylbenzene (Cumene)
Aqueous	EPA 624.1	GC/MS	p-Isopropyltoluene
Aqueous	EPA 624.1	GC/MS	Methylene Chloride
Aqueous	EPA 624.1	GC/MS	Naphthalene
Aqueous	EPA 624.1	GC/MS	n-Propylbenzene
Aqueous	EPA 624.1	GC/MS	Styrene
Aqueous	EPA 624.1	GC/MS	1,1,1,2-Tetrachloroethane
Aqueous	EPA 624.1	GC/MS	1,1,2,2-Tetrachloroethane
Aqueous	EPA 624.1	GC/MS	Tetrachloroethene
Aqueous	EPA 624.1	GC/MS	Toluene
Aqueous	EPA 624.1	GC/MS	1,2,3-Trichlorobenzene
Aqueous	EPA 624.1	GC/MS	1,2,4-Trimethylbenzene
Aqueous	EPA 624.1	GC/MS	1,3,5-Trimethylbenzene
Aqueous	EPA 624.1	GC/MS	m-xylene
Aqueous	EPA 624.1	GC/MS	p-xylene
Aqueous	EPA 624.1	GC/MS	o-xylene

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 624.1	GC/MS	1,1-Dichloroethane
Aqueous	EPA 624.1	GC/MS	1,1,1-Trichloroethane
Aqueous	EPA 624.1	GC/MS	1,2-Dichloroethane
Aqueous	EPA 624.1	GC/MS	1,2,3-Trichloropropane
Aqueous	EPA 624.1	GC/MS	1,2,4-Trichlorobenzene
Aqueous	EPA 624.1	GC/MS	1,1,2-Trichloroethane
Aqueous	EPA 624.1	GC/MS	Trichloroethene
Aqueous	EPA 624.1	GC/MS	Vinyl Acetate
Aqueous	EPA 624.1	GC/MS	Methyl acetate
Aqueous	EPA 624.1	GC/MS	Ethyl acetate
Aqueous	EPA 624.1	GC/MS	Acetone
Aqueous	EPA 624.1	GC/MS	2-Butanone
Aqueous	EPA 624.1	GC/MS	4-Methyl-2-pentanone
Aqueous	EPA 624.1	GC/MS	2-Hexanone
Aqueous	EPA 624.1	GC/MS	1,1-Dichloro-2-propanone
Aqueous	EPA 624.1	GC/MS	Pentane
Aqueous	EPA 624.1	GC/MS	3-Chloroprene (allyl chloride)
Aqueous	EPA 624.1	GC/MS	Di-isobutylene
Aqueous	EPA 624.1	GC/MS	1-Chlorohexane
Aqueous	EPA 624.1	GC/MS	Methyl-tert-butyl ether
Aqueous	EPA 624.1	GC/MS	Ethyl ether
Aqueous	EPA 624.1	GC/MS	Freon 113 (1,1,2-TCTFE)
Aqueous	EPA 624.1	GC/MS	Hexane
Aqueous	EPA 624.1	GC/MS	Heptane
Aqueous	EPA 624.1	GC/MS	Cyclohexane
Aqueous	EPA 624.1	GC/MS	Benzyl chloride
Aqueous	EPA 624.1	GC/MS	Iodomethane
Aqueous	EPA 624.1	GC/MS	Carbon Disulfide
Aqueous	EPA 624.1	GC/MS	Chloroprene
Aqueous	EPA 624.1	GC/MS	Octane
Aqueous	EPA 624.1	GC/MS	Acrylonitrile
Aqueous	EPA 624.1	GC/MS	2-Nitropropane
Aqueous	EPA 624.1	GC/MS	Tetrahydrofuran
Aqueous	EPA 624.1	GC/MS	Tert-Butyl alcohol
Aqueous	EPA 624.1	GC/MS	Trans-1,4-Dichloro-2-butene
Aqueous	EPA 624.1	GC/MS	Methyl methacrylate

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 624.1	GC/MS	Isobutyl alcohol
Aqueous	EPA 624.1	GC/MS	Hexachloroethane
Aqueous	EPA 624.1	GC/MS	Ethyl methacrylate
Aqueous	EPA 624.1	GC/MS	2-Propanol
Aqueous	EPA 624.1	GC/MS	1-Propanol
Aqueous	EPA 624.1	GC/MS	Propionitrile
Aqueous	EPA 624.1	GC/MS	Methacrylonitrile
Aqueous	EPA 624.1	GC/MS	Pentachloroethane
Aqueous	EPA 624.1	GC/MS	Nitrobenzene
Aqueous	EPA 624.1	GC/MS	Methyl acrylate
Aqueous	EPA 624.1	GC/MS	Chloroacetonitrile
Aqueous	EPA 624.1	GC/MS	1-Chlorobutane
Aqueous	EPA 624.1	GC/MS	tert-amyl methyl ether
Aqueous	EPA 624.1	GC/MS	Ethyl tert-butyl ether
Aqueous	EPA 624.1	GC/MS	Di-isopropyl ether
Aqueous	EPA 624.1	GC/MS	Methyl cyclohexane
Aqueous	EPA 624.1	GC/MS	Acetonitrile
Aqueous	EPA 624.1	GC/MS	Acrolein
Aqueous	EPA 624.1	GC/MS	2-Chloroethyl vinyl ether
Aqueous	EPA 624.1	GC/MS	Bromomethane
Aqueous	EPA 624.1	GC/MS	Chloroethane
Aqueous	EPA 624.1	GC/MS	Chloromethane
Aqueous	EPA 624.1	GC/MS	Dichlorodifluoromethane
Aqueous	EPA 624.1	GC/MS	Trichlorofluoromethane
Aqueous	EPA 624.1	GC/MS	Vinyl Chloride
Aqueous	EPA 624.1	GC/MS	N-propyl bromide
Aqueous	EPA 624.1	GC/MS	Dichlorofluoromethane
Aqueous	EPA 625.1	GC/MS	1,1'-Biphenyl
Aqueous	EPA 625.1	GC/MS	1,2,4,5-Tetrachlorobenzene
Aqueous	EPA 625.1	GC/MS	1,2,4-Trichlorobenzene
Aqueous	EPA 625.1	GC/MS	1,2-Dichlorobenzene
Aqueous	EPA 625.1	GC/MS	1,2-Dinitrobenzene
Aqueous	EPA 625.1	GC/MS	1,2-Diphenylhydrazine
Aqueous	EPA 625.1	GC/MS	1,3-Dichlorobenzene
Aqueous	EPA 625.1	GC/MS	1,3-Dinitrobenzene
Aqueous	EPA 625.1	GC/MS	1,4-Dichlorobenzene

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

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Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 625.1	GC/MS	1,4-Dinitrobenzene
Aqueous	EPA 625.1	GC/MS	1,4-Dioxane
Aqueous	EPA 625.1	GC/MS	1-Methylnaphthalene
Aqueous	EPA 625.1	GC/MS	2,3,4,6-Tetrachlorophenol
Aqueous	EPA 625.1	GC/MS	2,3,5,6-Tetrachlorophenol
Aqueous	EPA 625.1	GC/MS	2,3-Dichloroaniline
Aqueous	EPA 625.1	GC/MS	2,4,5-Trichlorphenol
Aqueous	EPA 625.1	GC/MS	2,4,6-Trichlorophenol
Aqueous	EPA 625.1	GC/MS	2,4-Dichlorophenol
Aqueous	EPA 625.1	GC/MS	2,4-Dimethylphenol
Aqueous	EPA 625.1	GC/MS	2,4-Dinitrophenol
Aqueous	EPA 625.1	GC/MS	2,4-Dinitrotoluene
Aqueous	EPA 625.1	GC/MS	2,6-Dichlorophenol
Aqueous	EPA 625.1	GC/MS	2,6-Dinitrotoluene
Aqueous	EPA 625.1	GC/MS	2-Chloronaphthalene
Aqueous	EPA 625.1	GC/MS	2-Chlorophenol
Aqueous	EPA 625.1	GC/MS	2-Methylnaphthalene
Aqueous	EPA 625.1	GC/MS	2-Methylphenol
Aqueous	EPA 625.1	GC/MS	2-Naphthylamine
Aqueous	EPA 625.1	GC/MS	2-Nitroaniline
Aqueous	EPA 625.1	GC/MS	2-Nitrophenol
Aqueous	EPA 625.1	GC/MS	3 & 4-Methylphenols
Aqueous	EPA 625.1	GC/MS	3,3'-Dichlorobenzidine
Aqueous	EPA 625.1	GC/MS	3-Nitroaniline
Aqueous	EPA 625.1	GC/MS	4,6-Dinitro-2-methylphenol
Aqueous	EPA 625.1	GC/MS	4-Bromophenyl-Phenylether
Aqueous	EPA 625.1	GC/MS	4-Chloro-3-Methylphenol
Aqueous	EPA 625.1	GC/MS	4-Chloroaniline
Aqueous	EPA 625.1	GC/MS	4-Chlorophenyl-phenylether
Aqueous	EPA 625.1	GC/MS	4-Nitroaniline
Aqueous	EPA 625.1	GC/MS	4-Nitrophenol
Aqueous	EPA 625.1	GC/MS	Acenaphthene
Aqueous	EPA 625.1	GC/MS	Acenaphthylene
Aqueous	EPA 625.1	GC/MS	Acetophenone
Aqueous	EPA 625.1	GC/MS	alpha-Terpineol
Aqueous	EPA 625.1	GC/MS	Aniline

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

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Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 625.1	GC/MS	Anthracene
Aqueous	EPA 625.1	GC/MS	Atrazine
Aqueous	EPA 625.1	GC/MS	Azobenzene
Aqueous	EPA 625.1	GC/MS	Benzaldehyde
Aqueous	EPA 625.1	GC/MS	Benzidine
Aqueous	EPA 625.1	GC/MS	Benzo(a)Anthracene
Aqueous	EPA 625.1	GC/MS	Benzo(a)Pyrene
Aqueous	EPA 625.1	GC/MS	Benzo(b)Fluoranthene
Aqueous	EPA 625.1	GC/MS	Benzo(g,h,i)Perylene
Aqueous	EPA 625.1	GC/MS	Benzo(k)Fluoranthene
Aqueous	EPA 625.1	GC/MS	Benzyl Alcohol
Aqueous	EPA 625.1	GC/MS	bis (2-ethylhexyl)adipate
Aqueous	EPA 625.1	GC/MS	Bis(2-Chloroethoxy)Methane
Aqueous	EPA 625.1	GC/MS	Bis(2-Chloroethyl)Ether
Aqueous	EPA 625.1	GC/MS	bis(2-Chloroisopropyl)ether
Aqueous	EPA 625.1	GC/MS	bis(2-ethylhexyl)Phthalate
Aqueous	EPA 625.1	GC/MS	Butylbenzylphthalate
Aqueous	EPA 625.1	GC/MS	Caprolactam
Aqueous	EPA 625.1	GC/MS	Carbazole
Aqueous	EPA 625.1	GC/MS	Chrysene
Aqueous	EPA 625.1	GC/MS	Dibenzo(a,h)anthracene
Aqueous	EPA 625.1	GC/MS	Dibenzofuran
Aqueous	EPA 625.1	GC/MS	Diethylphthalate
Aqueous	EPA 625.1	GC/MS	Dimethoate
Aqueous	EPA 625.1	GC/MS	Dimethylphthalate
Aqueous	EPA 625.1	GC/MS	Di-n-Butylphthalate
Aqueous	EPA 625.1	GC/MS	Di-n-Octylphthalate
Aqueous	EPA 625.1	GC/MS	Diphenylamine
Aqueous	EPA 625.1	GC/MS	Fluoranthene
Aqueous	EPA 625.1	GC/MS	Fluorene
Aqueous	EPA 625.1	GC/MS	Hexachlorobenzene
Aqueous	EPA 625.1	GC/MS	Hexachlorobutadiene
Aqueous	EPA 625.1	GC/MS	Hexachlorocyclopentadiene
Aqueous	EPA 625.1	GC/MS	Hexachloroethane
Aqueous	EPA 625.1	GC/MS	Indeno(1,2,3-cd)Pyrene
Aqueous	EPA 625.1	GC/MS	Isophorone

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

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Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 625.1	GC/MS	Naphthalene
Aqueous	EPA 625.1	GC/MS	n-Decane
Aqueous	EPA 625.1	GC/MS	n-Heptadecane
Aqueous	EPA 625.1	GC/MS	Nitrobenzene
Aqueous	EPA 625.1	GC/MS	N-Nitrosodiethylamine
Aqueous	EPA 625.1	GC/MS	N-Nitrosodimethylamine
Aqueous	EPA 625.1	GC/MS	N-Nitroso-di-n-butylamine
Aqueous	EPA 625.1	GC/MS	N-Nitrosodinpropylamine
Aqueous	EPA 625.1	GC/MS	N-Nitrosodiphenylamine
Aqueous	EPA 625.1	GC/MS	N-Nitrosopyrrolidine
Aqueous	EPA 625.1	GC/MS	n-Octadecane
Aqueous	EPA 625.1	GC/MS	Pentachlorobenzene
Aqueous	EPA 625.1	GC/MS	Pentachlorophenol
Aqueous	EPA 625.1	GC/MS	Phenanthrene
Aqueous	EPA 625.1	GC/MS	Phenol
Aqueous	EPA 625.1	GC/MS	Pyrene
Aqueous	EPA 625.1	GC/MS	Pyridine
Aqueous	SM4500P E	Spectrophotometric	Orthophosphate
Solid	EPA 7471B	CVAA/CVAF	Mercury
Solid	EPA 8270D, EPA 8270E	GC/MS	Resorcinol
Solid	EPA 9045D	Electrode	pH, Corrosivity, Hydrogen Ion
Solid	EPA 9030B/9034	Titrimetric	Sulfide
Solid	EPA 9060A	Combustion	Total Organic Carbon (TOC)
Solid	EPA 9071B	Gravimetric	Hexane Extractable Materials (HEM)
Solid	EPA 9071B	Gravimetric	Total Petroleum Hydrocarbons (TPH)
Solid	EPA 9095B	Gravimetric	Paint Filter Test
Solid	SM 2320B	Titrimetric	Alkalinity
Solid	SM 2540G	Gravimetric	Total Solids
Aqueous/Solid	EPA 314.0	IC	Perchlorate
Aqueous/Solid	EPA 365.1	Spectrophotometric	Phosphorus
Aqueous/Solid	SM4500NH3 G (TKN)	Spectrophotometric	Total Kjeldahl Nitrogen (TKN)
Aqueous/Solid	ASTM D6919-09	IC	Ammonia
Aqueous	EPA 1664B	Gravimetric	Hexane Extractable Materials (HEM)
Aqueous/Solid	EPA 1664B	Gravimetric	Total Petroleum Hydrocarbons (TPH)
Aqueous/Solid	NJEPH (C8-C44)	GC/FID	EPH
Aqueous/Solid	EPA 300.0, EPA 9056A	IC	Bromide

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 300.0, EPA 9056A	IC	Chloride
Aqueous/Solid	EPA 300.0, EPA 9056A	IC	Fluoride
Aqueous/Solid	EPA 300.0, EPA 9056A	IC	Nitrate
Aqueous/Solid	EPA 300.0, EPA 9056A	IC	Nitrite
Aqueous/Solid	EPA 300.0, EPA 9056A	IC	Sulfate
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Bismuth
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Boron
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Calcium Hardness (CaCO3)
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Hardness-Total as CaCO3
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Lithium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Sulfur
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Aluminum
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Antimony
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Arsenic
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Barium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Beryllium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Cadmium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Calcium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Chromium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Cobalt
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Copper
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Iron
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Lead
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Magnesium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Manganese
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Molybdenum
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Nickel
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Potassium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Selenium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Silica as SiO2
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Silver
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Sodium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Strontium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Thallium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Tin
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Titanium

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Vanadium
Aqueous/Solid	EPA 6010D, EPA 6010C	ICP	Zinc
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Aluminum
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Antimony
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Arsenic
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Barium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Beryllium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Cadmium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Calcium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Calcium Hardness (calculation Ca)
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Chromium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Cobalt
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Copper
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Iron
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Lead
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Magnesium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Manganese
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Molybdenum
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Mercury
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Nickel
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Potassium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Selenium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Silver
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Sodium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Strontium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Thallium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Tin
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Titanium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Total Hardness (calculation Ca and Mg)
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Uranium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Vanadium
Aqueous/Solid	EPA 6020B, EPA 6020A	ICP-MS	Zinc
Aqueous/Solid	EPA 7.3.3.2, EPA 9012B	Colorimetric	Reactive Cyanide
Aqueous/Solid	EPA 7196A	Spectrophotometric	Hexavalent Chromium
Aqueous/Solid	EPA 8015D	GC/FID	Oil Range Organics (ORO)
Aqueous/Solid	EPA 8015D	GC/FID	TPH Diesel (DRO)

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8015D	GC/FID	TPH Gasoline (GRO)
Aqueous/Solid	EPA 8081B	GC-ECD	4,4'-DDD
Aqueous/Solid	EPA 8081B	GC-ECD	4,4'DDE
Aqueous/Solid	EPA 8081B	GC-ECD	4,4'-DDT
Aqueous/Solid	EPA 8081B	GC-ECD	Aldrin (HHDN)
Aqueous/Solid	EPA 8081B	GC-ECD	alpha-BHC
Aqueous/Solid	EPA 8081B	GC-ECD	alpha-Chlordane
Aqueous/Solid	EPA 8081B	GC-ECD	beta-BHC
Aqueous/Solid	EPA 8081B	GC-ECD	Chlordane (tech.)
Aqueous/Solid	EPA 8081B	GC-ECD	delta-BHC
Aqueous/Solid	EPA 8081B	GC-ECD	Dieldrin
Aqueous/Solid	EPA 8081B	GC-ECD	Endosulfan I
Aqueous/Solid	EPA 8081B	GC-ECD	Endosulfan II
Aqueous/Solid	EPA 8081B	GC-ECD	Endosulfan Sulfate
Aqueous/Solid	EPA 8081B	GC-ECD	Endrin
Aqueous/Solid	EPA 8081B	GC-ECD	Endrin Aldehyde
Aqueous/Solid	EPA 8081B	GC-ECD	Endrin Ketone
Aqueous/Solid	EPA 8081B	GC-ECD	gamma-BHC (Lindane)
Aqueous/Solid	EPA 8081B	GC-ECD	gamma-Chlordane
Aqueous/Solid	EPA 8081B	GC-ECD	Heptachlor
Aqueous/Solid	EPA 8081B	GC-ECD	Heptachlor Epoxide
Aqueous/Solid	EPA 8081B	GC-ECD	Methoxychlor
Aqueous/Solid	EPA 8081B	GC-ECD	Mirex
Aqueous/Solid	EPA 8081B	GC-ECD	Toxaphene (Chlorinated Camphene)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1016 (PCB-1016)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1221 (PCB-1221)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1232 (PCB-1232)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1242 (PCB-1242)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1248 (PCB-1248)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1254 (PCB-1254)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1260 (PCB-1260)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1262 (PCB-1262)
Aqueous/Solid	EPA 8082A	GC-ECD	Aroclor-1268 (PCB-1268)
Aqueous/Solid	EPA 8151A	GC-ECD	2,4,5,-TP (Silvex)
Aqueous/Solid	EPA 8151A	GC-ECD	2,4,5-T
Aqueous/Solid	EPA 8151A	GC-ECD	2,4-D

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8151A	GC-ECD	2,4-DB
Aqueous/Solid	EPA 8151A	GC-ECD	Dalapon
Aqueous/Solid	EPA 8151A	GC-ECD	Dicamba
Aqueous/Solid	EPA 8151A	GC-ECD	Dichloroprop
Aqueous/Solid	EPA 8151A	GC-ECD	Pentachlorophenol
Aqueous/Solid	EPA 8151A	GC-ECD	4-Nitrophenol
Aqueous/Solid	EPA 8151A	GC-ECD	Dinoseb
Aqueous/Solid	EPA 8151A	GC-ECD	MCPA
Aqueous/Solid	EPA 8151A	GC-ECD	MCPP
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1,1,2-Tetrachloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1,1-Trichloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1,2,2-Tetrachloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1,2-Trichloro-1,2,2-Trifluoroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1,2-Trichloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1-Dichloro-2-Propanone
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1-Dichloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1-Dichloroethene (1,1-Dichloroethylene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,1-Dichloropropene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2,3-Trichlorobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2,4-Trichlorobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2,4-Trimethylbenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2-Dibromo-3-Chloropropane (DBCP)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2-Dichlorobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2-Dichloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2-Dichloroethene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,2-Dichloropropane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,3,5-Trimethylbenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,3-Dichlorobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,3-Dichloropropane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,3-Dichloropropene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1,4-Dichlorobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1-Chlorobutane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1-Chlorohexane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	1-Propanol
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	2,2-Dichloropropane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	2-Butanone (MEK)

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Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	2-Chlorotoluene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	2-Hexanone (MBK)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	2-Nitropropane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	2-Propanol (Isopropyl Alcohol)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	4-Isopropyltoluene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	4-Methyl-2-Pentanone (MIBK)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Acetone
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Acetonitrile
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Acrolein
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Acrylonitrile
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Allyl Chloride (3-Chloropropene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Benzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Benzyl Chloride
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Bromobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Bromochloromethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Bromodichloromethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Bromoform
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Bromomethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Carbon Disulfide
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Carbon Tetrachloride
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Chloroacetonitrile
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Chlorobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Chloroethane (Ethyl Chloride)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Chloroform
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Chloromethane (methyl chloride)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Chloroprene (2-Chloro-1,3-butadiene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	cis-1,2-Dichloroethene Draf(cis-1,2-Dichloroethylene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	cis-1,3-Dichloropropene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Cyclohexane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Dibromochloromethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Dibromomethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Dichlorodifluoromethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Dichlorofluoromethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Diethyl Ether
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Diisobutylene (2,4,4-Trimethyl-l-pentene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Diisopropyl Ether (Propane)

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Ethyl Acetate
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Ethyl Benzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Ethyl Methacrylate
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Ethyl-tert-butylether (ETBE)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Heptane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Hexachlorobutadiene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Hexachloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Hexane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Idomethane (Methyl Iodide)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Isobutyl Alcohol (2 methyl-1-propanol)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Isopropylbenzene (Cumene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	m + p Xylene (1,3 + 1,4 Xylene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methacrylonitrile
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methyl Acetate
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methyl Acrylate
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methyl Methacrylate
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methylcyclohexane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methylene Chloride
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Methyl-tert-butylether (MTBE)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Naphthalene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	n-Butylbenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Nitrobenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	n-Propylbenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Octane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	o-Xylene (1,2-Xylene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Pentachloroethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Pentane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Propionitrile (Ethyl Cyanide)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	sec-Butylbenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Styrene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	tert-Amyl Alcohol (2-methyl-2-but)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	tert-Amyl ethyl Ether
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	tert-Amyl Methyl Ether (TAME)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	tert-Butyl Alcohol
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	tert-Butylbenzene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Tetrachloroethene

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Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Tetrahydrofuran (THF)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Toluene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	trans 1,3-Dichloropropene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	trans 1,4-Dichloro-2-butene
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	trans-1,2-Dichloroethene (trans-1,2 Dichloroethylene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Trichloroethene (Trichloroethylene)
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Trichlorofluoromethane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Vinyl Acetate
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Vinyl Chloride
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS	Xylenes-Total
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS / GC-ECD	1,2,3-Trichloropropane
Aqueous/Solid	EPA 8260C, EPA 8260D	GC/MS / GC-ECD	1,2-Dibromoethane (EDB)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,1-Biphenyl
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,2,4,5-Tetrachlorobezene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,2,4-Trichlorobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,2-Dichlorobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,2-Dinitrobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,2-Diphenylhydrazine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,3-Dichlorobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,3-Dinitrobenzene (1,3-DNB)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,4-Dichlorobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	1,4-Dinitrobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,3,4,6-Tetrachlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,3,5,6-Tetrachlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,3-Dichloroaniline
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,4,5-Trichlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,4,6-Trichlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,4-Dichlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,6-Dichlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2-Chloronaphthalene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2-Chlorophenol (o-Cresol)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2-Methylphenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2-Naphthylamine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2-Nitroaniline
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2-Nitrophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,4-Dimethylphenol

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	2,4-Dinitrophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	3&4-Methylphenol (m&p-Cresol)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	3-3'-Dichlorobenzidine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	3-Nitroaniline
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4,6-Dinitro-2-Methylphenol (2-Methyl-4,6-dinitrophenol)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4-Bromophenyl-Phenyl Ether
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4-Chloro-3-Methylphenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4-Chloroaniline
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4-Chlorophenyl-Phenyl Ether
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4-Nitroaniline
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	4-Nitrophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Acetophenone
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Alpha-Terpineol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Aniline
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Atrazine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Azobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Benzaldehyde
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Benzidine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Benzoic Acid
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Benzyl Alcohol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Bis(2-chloroethoxy) Ether
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Bis(2-chloroethoxy) Methane
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Bis(2-Chloroisopropyl) Ether
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Bis(2-Ethylhexyl) Adipate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Bis(2-Ethylhexyl) Phthalate(DEHP)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Butyl Benzyl Phthalate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Caprolactam
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Carbazole
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Dibenzofuran
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Diethyl Phthalate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Dimethoate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Dimethyl Phthalate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Di-n-Butyl Phthalate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Di-n-Octyl Phthalate
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Dioxin Screen (2,3,7,8-TCDD)
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Diphenylamine

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Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Hexachlorethane
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Hexachlorobutadiene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Hexachlorocyclopentadiene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Isophorone
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Decane
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Heptadecane
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Nitrobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Nitrosodiethylamine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Nitrosodimethylamine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Nitrosodiphenylamine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Nitroso-di-n-Butylamine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Nitrosodi-n-Propylamine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Nitrosopyrrolidine
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	n-Octadecane
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Pentachlorobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Pentachlorophenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Phenol
Aqueous/Solid	EPA 8270D, EPA 8270E	GC/MS	Pyridine
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	1-Methylnaphthalene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	1,4-Dioxane (1,4-Diethlyeneoxide)
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	2-Methylnaphthalene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	2,4-Dinitrotoluene (2,4-DNT)
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	2,6-Dinitrotoluene (2,6-DNT)
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Acenaphthene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Acenaphthylene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Anthracene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Benzo (k) Fluoranthene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Benzo(a)Anthracene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Benzo(a)Pyrene

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Benzo(b)Fluoranthene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Benzo(ghi)Perylene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Bis(2-Chlorethyl) Ether
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Chrysene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Dibenzo(a,h)Anthracene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Fluoranthene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Fluorene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Hexachlorobenzene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Indeno (1,2,3-CD) Pyrene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Naphthalene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Phenanthrene
Aqueous/Solid	EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM	GC/MS/SIM	Pyrene
Aqueous/Solid	EPA 8330B	HPLC	1,3,5-Trinitrobenzene (1,3,5-TNB)
Aqueous/Solid	EPA 8330B	HPLC	1,3-Dinitrobenzene (1,3-DNB)
Aqueous/Solid	EPA 8330B	HPLC	2,4,6-Trinitrotoluene (2,4,6-TNT)
Aqueous/Solid	EPA 8330B	HPLC	2,4-Dinitrotoluene (2,4-DNT)
Aqueous/Solid	EPA 8330B	HPLC	2,6-Dinitrotoluene (2,6-DNT)
Aqueous/Solid	EPA 8330B	HPLC	2-Amino-4,6-Dinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	2-Nitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	3,5-Dinitroaniline
Aqueous/Solid	EPA 8330B	HPLC	3-Nitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	4-Amino-2,6-Dinitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	4-Nitrotoluene
Aqueous/Solid	EPA 8330B	HPLC	HMX
Aqueous/Solid	EPA 8330B	HPLC	Nitrobenzene
Aqueous/Solid	EPA 8330B	HPLC	Nitroglycerin
Aqueous/Solid	EPA 8330B	HPLC	PETN
Aqueous/Solid	EPA 8330B	HPLC	RDX
Aqueous/Solid	EPA 8330B	HPLC	Tetryl

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous/Solid	EPA 9012B	Colorimetric	Total Cyanide
Aqueous/Solid	EPA 9020B/9023	Combustion	Total Organic Halides
Aqueous/Solid	EPA 9066	Colorimetric	Phenolic Substances
Aqueous/Solid	SM 2340B	ICP/ICP-MS	Calcium Hardness (calculation Ca)
Aqueous/Solid	SM 2340B	ICP/ICP-MS	Total Hardness (calculation Ca and Mg)
Aqueous/Solid	SW846 7.3.4.2	Colorimetric	Reactive Sulfide

Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

Matrix	Standard/Method	Technology	Analyte
Aqueous	EPA 3510C	Sep Funnel Extraction	Semivolatiles, pesticides, PCBs
Aqueous	EPA 5030C & EPA 5030B	Purge and Trap	Volatile Organics Prep
Aqueous	EPA 3511	Micro Extraction	Semivolatiles, pesticides, PCBs
Solid	EPA 1030	Ignition	Ignitability
Solid	EPA 3050B	Acid Digestion Hot Plate	Metals
Solid	EPA 3535	Solid Phase Extraction	Prep Method (Explosives)
Solid	EPA 3546	Microwave Extraction	Semivolatiles, pesticides, PCBs
Solid	EPA 3580A	Waste Dilution	Semivolatiles, pesticides, PCBs
Solid	EPA 5035A	P&T closed	Volatiles
Aqueous/Solid	EPA 1010A	Pensky Martin	Flashpoint
Aqueous/Solid	EPA 1311	TCLP	Physical Extraction
Aqueous/Solid	EPA 1311	TCLP ZHE	Physical Extraction
Aqueous/Solid	EPA 1312	SPLP	Physical Extraction
Aqueous/Solid	ASTM D3987	ASTM Leachate Extraction	Physical Extraction
Aqueous/Solid	EPA 3015A, EPA 3051A	Acid Digestion Microwave	Metals
Aqueous/Solid	EPA 3620B	Florisil Clean-Up	Semivolatiles, pesticides, PCBs
Aqueous/Solid	EPA 3660B	Sulfur Cleanup	PCB's
Aqueous/Solid	EPA 3665A	Sulfuric Acid Cleanup	PCBs
Aqueous/Solid	SM 4500 Norg B+C	Kjeldahl Method	Total Kjeldahl Nitrogen (TKN)

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

Intertek-PSI, Inc.

850 Poplar St Pittsburgh, PA 15220-2828

Laboratory ID: LAP-100373

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: July 01, 2024
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: July 01, 2024
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: July 01, 2024
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision20: 06/07/2022

Date Issued: 07/01/2022

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101350-0

Intertek-PSI, Inc.

Pittsburgh, PA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2023-07-01 through 2024-06-30

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Intertek-PSI, Inc.
PSI, Inc.
850 Poplar Street
Pittsburgh, PA 15220
Morgan Ryan
Phone: 304-670-8925
Email: morgan.ryan@intertek.com
http://www.intertek.com

ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 101350-0**

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

APPENDIX C

DEMOLITION/RENOVATION NOTIFICATION AND WASTE DISPOSAL FACILITY PERMITS AND LICENSES

Notification of Demolition and Renovation/Abatement

Section 1: General Information

Division of Air Pollution Control

Work on projects cannot begin until 10 working days after a COMPLETE original notification form, **including payment**, is submitted to Ohio EPA. Instructions and a worksheet for fee calculation are available at ***epa.ohio.gov/asbestos***. This form can be completed, and payment made, at ***ebiz.epa.ohio.gov***. Questions? ***asbestos@epa.ohio.gov*** or (614) 466-0061.

Ohio EPA Use Only	Notification #:	Postmarked: / /	Received: / /	☐ Hand-Delivered

1) Notification Information (Check all that apply)

☐ Original	☐ Revision # (count):	☐ Installation	☐ Emergency	☐ Annual	☐ Cancellation	**Project County:**
☐ NESHAP Residential Exemption						

2) Owner, Asbestos Abatement Contractor, Billing and Fire Department Information **Revised?** ☐

Owner		
Name:		Is this a company? ☐ Yes ☐ No
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -
Asbestos Abatement Contractor (if applicable)		
Name:	License #: AC	Expiration Date: / /
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -
Billing Contact (Entity paying for original notification)		
Is this contact associated with the ☐ Owner, ☐ Asbestos Abatement Contractor, or ☐ Demolition Contractor (if not installation)?		
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -
Fire Department (if applicable)		
Name:		
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -

3) Ohio Asbestos Hazard Evaluation Specialist and Evaluation Procedure **Revised?** ☐

Evaluation Specialist:	Certification #: ES	Expiration Date: / /
Procedure, including analytical methods, employed to detect the presence of and to estimate the quantity of regulated asbestos-containing material (RACM) and Category I and Category II non-friable asbestos-containing material: ☐ PLM ☐ Point Count ☐ TEM ☐ Other Method (Explain Below):		

4) Procedures to be followed should unexpected RACM be discovered (check all that apply) **Revised?** ☐

☐ Stop work and keep wet	☐ Evacuate area	☐ Demarcate area	☐ Contact licensed abatement contractor
☐ Contact district office/local air authority			
☐ Other (Explain):			

5) Planned Demolition (check all that apply) **Revised?** ☐

Describe demolition work to be performed and method(s) to be employed, including demolition techniques to be used: ☐ Implosion ☐ Fire Training ☐ Wet Methods ☐ Manual Demolition ☐ Mechanical Demolition ☐ Other (Explain):
Description of affected facility components (include attachment if necessary):

Mail completed form and payment to:
Ohio EPA, DAPC – Asbestos
P.O. Box 1049, Columbus, OH 43216-1049

Notification of Demolition and Renovation/Abatement

Section 1: General Information

Continued

6) Asbestos Description and Engineering Controls (if asbestos is being abated) **Revised?** ☐

For the material listed in each project, describe the type(s) of ACM to be abated, engineering controls and work practices to be used to minimize emissions and ensure proper waste handling:					
Type of ACM to be abated:	☐ Surfacing	☐ Mechanical	☐ Other		
Engineering Controls:	☐ Wet Methods	☐ Glove Bag	☐ NPE	☐ AFD	☐ Other:
Work Practices:	☐ Intact Removal	☐ Manual	☐ Mechanical	☐ Other:	

7) Asbestos Waste Transporter (if applicable) **Revised?** ☐

Transporter #1 Name:		
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -
Transporter #2 Name (if applicable):		
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -

8) Asbestos Waste Disposal Site (if applicable) **Revised?** ☐

Name:		
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -

9) Emergency Demolition (complete if you checked "Emergency" above and "Demolition" for any project) **Revised?** ☐

A copy of the issued order, including the following information, **must be attached** to this notification.	
Government Official Issuing Order:	Title:
Agency:	Authority of Order (Citation of Code):
Date of Order: / /	Demolition Date: / /

10) Emergency Renovation/Abatement (complete if you checked "Emergency" above and "Renovation/Abatement" for any project) **Revised?** ☐

Date of Emergency: / /	Time of Emergency: : ☐ a.m. ☐ p.m.
Description of Sudden, Unexpected Event:	
Explanation of how the event caused unsafe conditions or equipment damage:	

11) Attestation **Revised?** ☐

In accordance with Ohio Administrative Code rule 3745-20-03(A)(4)(p), I certify that at least one person trained as required by paragraph (B) of rule 3745-20-04 of the Administrative Code will supervise the stripping and removal described by this notification. I acknowledge that the submission of false or misleading statements is prohibited by law and I certify that facts contained in this notification are true, accurate, and complete.	
Signature:	Date: / /
Name:	Title:
Organization:	

Notification of Demolition and Renovation/Abatement
Section 2: Project Address Specific Information
Division of Air Pollution Control

Please complete Section 2 for the address included with this notification. If the project is an "Installation" per OAC 3745-20, complete a separate Section 2 page for each address associated with this notification.

Ohio EPA Use Only	Project ID #:

A. Facility Description **Revised?** ☐

Building Name (if applicable):	Site Location (specific):	
Address:		
City:	State: OH	Zip: -
Building Size (square feet):	No. of Floors:	Age:
Present Use:	Prior Use:	

B. Type of Operation (check all that apply) **Revised?** ☐

☐ Demolition	☐ Renovation/Abatement – Type: ☐ Removal ☐ Repair ☐ Encapsulation ☐ Enclosure

C. Asbestos Present (check one) **Revised?** ☐

☐ Yes	☐ No	☐ No, previously abated	Year Abated:

D. Approximate Amount of Asbestos-Containing Materials (complete table below and Section 1 #6 if asbestos is present) **Revised?** ☐

	Material to be Removed			Material NOT to be Removed	
		Non-friable Asbestos-Containing Material		Non-friable Asbestos-Containing Material	
	RACM	Category I	Category II	Category I	Category II
Pipes (linear feet)					
Surface area on other facility components (ft^2)					
Volume if length or area cannot be measured (ft^3)					

E. Asbestos Abatement Schedule and Abatement Specialist (original notification is required 10 working days prior to the start of work) **Revised?** ☐

Setup Date: / /		Abatement Date: / /			Complete Date: / /		
(Shift 1) Time start/end on site	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Abatement Specialist Name:			Certification #: AS			Expiration Date: / /	
(Shift 2) Time start/end on site	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Abatement Specialist Name:			Certification #: AS			Expiration Date: / /	

F. Demolition Contractor (if applicable) **Revised?** ☐

Name:		
Address:	Contact Person:	
City:	State:	Zip: -
Email:	Phone: ( ) -	Fax: ( ) -

G. Demolition Schedule (original notification is required 10 working days prior to the start of work) **Revised?** ☐

Start Date: / /	Complete Date: / /

H. Project Hold **Revised?** ☐

Asbestos Abatement Offsite/On Hold as of Date: / /	Asbestos Abatement On Site/Off Hold, Work Resume Date: / /
Demolition Offsite/On Hold as of Date: / /	Demolition On Site/Off Hold, Work Resume Date: / /

2023 2023

Ohio Environmental Protection Agency

Solid Waste Facility License
Municipal Solid Waste Landfill

License Expires December 31, 2023

Facility:	American Landfill Inc CID: 38042 7916 Chapel St SE Waynesburg, OH 44688	**Licensee:**	American Landfill, Inc. 7916 Chapel Street, SE Waynesburg, OH 44688

This license has been issued in accordance with the requirements of state law, is subject to revocation or suspension for cause, and is not transferable without the consent of the approved Board of Health and the Director of the Ohio Environmental Protection Agency.

Licensing Authority: Stark County Combined General Health District

Conditions of Licensure:

The Licensee hereunder, its agents, employees, and all others in active concert with said licensee, including the facility owner and operator, shall be subject to and shall comply with the following conditions of this license:

1. All applicable requirements of Ohio Revised Code Chapters 3734, 3767, 6111, and 3704 and rules adopted thereunder.

2. Permits-to-install, plans, operational reports, other authorizing documents, and administrative and judicial orders applicable to this facility and as approved by the Director of the Ohio Environmental Protection Agency.

3. This license is conditional upon payment of the applicable fee to the Board of Health or the Director, as appropriate, within 30 days after issuance.

4. By applying for and accepting this license, the licensee specifically consents in advance and agrees to allow the Director, the Health District, or an authorized representative, to enter upon the licensee's premises at any reasonable time during the construction and/or operation of the facility for the purpose of inspecting, conducting tests, collecting samples, or examining records or reports pertaining to construction, modification, installation, or operation of the facility. The licensee hereby acknowledges and agrees that any and all rights of access granted herein shall not be deemed to be unreasonable or unlawful under Ohio Revised Code Sec. 3734.07. The licensee, its agents, employees, and all others in active concert with said licensee shall maintain and operate the facility to which the license pertains in a sanitary manner so as not to create a nuisance, cause or contribute to water pollution, or create a health hazard. This license shall not be construed to constitute a defense to any civil or criminal action brought by the State of Ohio or any duly authorized representative thereof to enforce the provisions of Chapters 3734, 3767, 6111, or 3704 of the Ohio Revised Code, or regulations issued thereunder. Issuance of this license does not relieve the licensee of the duty to comply with all applicable federal, state, and local laws, regulations and ordinances.

☑ **If Checked, Additional Conditions Apply to This License (See Back, or Attachment)**

Kirkland K. Nauss

Health Commissioner

DECEMBER 29, 2022

Date Issued

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

CERTIFIED MAIL

July 17, 2014

Envirite of Ohio, Inc.
Attn: Anthony Dugan
2050 Central Avenue, SE
Canton, Ohio 44707

Re: Envirite of Ohio, Inc.

Permit Renewal
Hazardous Waste
Stark
OHD 980 598 992

Dear Mr. Dugan:

Here is the renewed Ohio Hazardous Waste Facility Installation and Operation Permit (Permit) for Envirite of Ohio, Inc. I have also enclosed a copy of the Response to Comments Ohio EPA prepared in response to written comments the Agency received concerning the Part B permit application. The Permit is effective today, July 17, 2014. The date-stamped, page-numbered copy of the Part B permit application is also enclosed.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

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

If you have any questions concerning compliance, please contact Paul Dolensky of Ohio EPA's Northeast District Office at (330) 963-1200.

Sincerely,

Demitria Crumiell-Hagens

Demitria Crumiell-Hagens, Administrative Professional 2
Division of Materials and Waste Management

Attachments

cc: John Nyers, DMWM-CO
Scott Hester, DMWM-CO
Paul Dolensky, DMWM-NEDO
Nyall McKenna, DMWM-NEDO
Ed Lim, DERR, CO
Harry Courtright, DERR-NEDO
Jae Lee, Lee.Jae@epamail.epa.gov

OHIO ENVIRONMENTAL PROTECTION AGENCY

OHIO HAZARDOUS WASTE FACILITY INSTALLATION AND OPERATION PERMIT RENEWAL

Permittee: Envirite of Ohio, Inc.

Mailing Address: Envirite of Ohio, Inc.
2050 Central Avenue, SE
Canton, OH 44707

Owner: Envirite of Ohio, Inc.
2050 Central Avenue, SE
Canton, OH 44707

Operator: Envirite of Ohio, Inc.
2050 Central Avenue, SE
Canton, OH 44707

Location: Envirite of Ohio, Inc.
2050 Central Avenue, SE
Canton, OH 44707

US EPA ID:	OHD 980 568 992
Issue Date:	July 17, 2014
Effective Date:	July 17, 2014
Expiration Date:	July 17, 2024

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By: [signature] **Date:** 7-17-14

AUTHORIZED ACTIVITIES

In reference to the application of Envirite of Ohio, Inc. for an Ohio Hazardous Waste Facility Installation and Operation Renewal Permit under Ohio Revised Code (ORC) Chapter 3734 and the record in this matter, you are authorized to conduct at the above-named facility the following hazardous waste management activities:

- Storage in containers and tanks
- Treatment in tanks and miscellaneous units
- Corrective Action

PERMIT APPROVAL

[signature]
Craig W. Butler, Director
Ohio Environmental Protection Agency

This permit approval is based upon the record in this matter which is maintained at the offices of the Ohio Environmental Protection Agency. The Director has considered the application, accompanying information, inspection reports of the facility, a report regarding the facility's compliance or noncompliance with the terms and conditions of its permit and rules adopted by the Director under this chapter, and such other information as is relevant to the operation of the facility. The Director has determined that the facility under the existing permit has a history of compliance with ORC Chapter 3734, rules adopted under it, the existing permit, or orders entered to enforce such requirements that demonstrate sufficient reliability, expertise, and competency to operate the facility henceforth under this chapter, rules adopted under it, and the renewal permit.

Entered into the Journal of the Director this 17th day of July, 2014

By [signature] of the Ohio Environmental Protection Agency

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

EGLE

LIESL EICHLER CLARK
DIRECTOR

March 13, 2020

Mr. Kerry Durnen
Vice President and General Manager
Michigan Disposal, Inc.
49350 North I-94 Service Drive
Belleville, Michigan 48111

Dear Mr. Durnen:

SUBJECT: Application for a Solid Waste Disposal Area License, Michigan Disposal, Inc., Michigan Disposal Waste Treatment Plant (MDWTP); Waste Data System Number 392708; License Number 9595

Staff of the Department of Environment, Great Lakes, and Energy (EGLE), Materials Management Division (MMD), have reviewed your application for a license for MDWTP located in Van Buren Township, Wayne County, Michigan. This review was conducted under the provisions of Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Based upon our review of your application, your operating license is hereby granted. Enclosed is your license with operating stipulations.

Should you require further information, please contact Mr. Greg Morrow, Warren District Assistant Supervisor, MMD at 586-753-3852; MorrowG@Michigan.gov; or EGLE, 27700 Donald Court, Warren, Michigan 48092.

Sincerely,

Rhonda Oyer, Manager
Solid Waste Section
Materials Management Division
517-897-1395

Enclosure
Cc: Wayne County Department of Public Services
Van Buren Township Clerk
Ms. Tracy Kecskemeti, EGLE
Mr. Gregory Morrow, EGLE
Facility File

EGLE

Michigan Department of Environment, Great Lakes, and Energy
Materials Management Division

SOLID WASTE DISPOSAL AREA OPERATING LICENSE

Effective April 22, 2019, the Michigan Department of Environmental Quality, by Executive Order Number 2019-06, became the Michigan Department of Environment, Great Lakes, and Energy (EGLE). Effective April 22, 2019, the Waste Management and Radiological Protection Division became the Materials Management Division (MMD).

This license is issued under the provisions of Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCL 324.11501 et seq., and authorizes the operation of this solid waste disposal area (Facility) in the state of Michigan. This license does not obviate the need to obtain other authorizations as may be required by state law.

FACILITY NAME: Michigan Disposal Waste Treatment Plant

LICENSEE/OPERATOR: Michigan Disposal Inc.

FACILITY OWNER: Michigan Disposal Inc.

PROPERTY OWNER: Wayne Disposal Inc.

FACILITY TYPE(S): Solid Waste Transfer Facility and Solid Waste Processing Plant

FACILITY ID NUMBER: 392708

COUNTY: Wayne

LICENSE NUMBER: 9595

ISSUE DATE: March 13, 2020

EXPIRATION DATE: March 13, 2025

FACILITY DESCRIPTION: The Michigan Disposal Waste Treatment Plant, a solid waste transfer facility and solid waste processing plant, consists of 7.66 acres located at 49350 N. I-94 Service Drive, Van Buran Township, Wayne County, Michigan, as identified in Attachment A and fully described in this license.

AREA AUTHORIZED FOR DISPOSAL OF SOLID WASTE: As identified in Attachment A and the documents referenced in Item 5 of this license.

RESPONSIBLE PARTY: Mr. Kerry Durnen, VP and General Manager
Michigan Disposal, Inc.
49350 North I-94 Service Drive
Belleville, Michigan 48111
734-699-6265

NEW OPERATING LICENSE: The previous Operating License Number 9411 for this Facility expired on October 17, 2019 prior to receipt of the application for this Operating License Number 9595. Therefore, this license is a new license issued to the licensee for the existing Facility.

This license is subject to revocation by the Director of the Michigan Department of Environment, Great Lakes, and Energy (Director) if the Director finds that this Facility is not being constructed or operated in accordance with the approved plans, the conditions of a permit or license, Part 115, or the rules promulgated under Part 115. Failure to comply with the terms and provisions of this license may result in legal action leading to civil and/or criminal penalties pursuant to Part 115. This license shall be available through the licensee during its term and remains the property of the Director.

THIS LICENSE IS NOT TRANSFERABLE.

Rhonda S. Oyer, Manager, Solid Waste Section
Materials Management Division

(Revised 05/2019)

The licensee shall comply with all terms of this license and the provisions of Part 115 and its administrative rules. This license includes the license application and any attachments to this license.

1. The licensee shall operate the Facility in a manner that will prevent violations of any state or federal law.

2. The attached map (Attachment A) shows the Facility, the area permitted for construction and/or placement and acceptance of waste, and the following, if applicable: monitoring points, leachate storage units, site roads, other disposal areas, and related appurtenances.

3. Issuance of this license is conditioned on the accuracy of the information submitted by the Operator/Applicant in the Application for License to Operate a Solid Waste Disposal Area (Application) received by EGLE on November 14, 2019, and any subsequent amendments. Any material or intentional inaccuracies found in that information is grounds for the revocation or modification of this license and may be grounds for enforcement action. The licensee shall inform EGLE's MMD Warren District Supervisor of any inaccuracies in the information in the Application upon discovery.

4. This license is issued based on EGLE's review of the Application, submitted by Michigan Disposal, Inc., for the Michigan Disposal Waste Treatment Plant, dated November 1, 2019. The Application consists of the following:

   a. Application Form EQP 5507.

   b. Application fee in the amount of $500.00.

   c. Certification of construction by NA.

   d. Financial Assurance.

      Financial Assurance Required:

      The amount of financial assurance required for this Facility was calculated based on the requirements of Section 11523(1)(c), is indicated on the form EQP 5507A entitled, "Form A Financial Assurance Required," and is $16,500.00.

      The Facility has provided financial assurance totaling $16,500.00, based on the requirements of Section 11523 of Part 115. The financial assurance mechanism used by the Facility is summarized below.

      The following financial assurance has been received from the licensee to meet the amount of financial assurance required:

Insurance	$16,500.00
Total Amount Received:	$16,500.00

5. This previously "grandfathered" facility did not have a construction permit but the following documents are incorporated in this license by reference:

   a. Engineering Plans dated October 27, 1981.

   b. Engineering Plans dated March 30, 1990.

   c. Engineering Plans received by EGLE on March 18, 1992.

   d. Waste Solidification Operation Site Plan dated, January 30, 1995.

   e. Engineering Plan dated July 23, 1999.

f. As-built drawings for the enclosure of the North Container Storage Area dated March 3, 2004 (Drawing S-5), June 3, 2002 (Drawings S-19 through S-23), and June 6, 2001 (Drawing S-24) and received by EGLE on March 10, 2004.

6. The following additional documents, approved since the issuance of the construction permit(s) referenced in Item 5, are incorporated in this license by reference: N/A.

7. Consent Order/Judgment Number: MMD Consent Order Number FTO-115-04-2020, entered on March 13, 2020 is incorporated into this license by reference.

8. The licensee shall conduct hydrogeological monitoring in accordance with the approved hydrogeological monitoring plan, dated N/A. The sampling analytical results shall be submitted to EGLE's MMD Warren District Office.

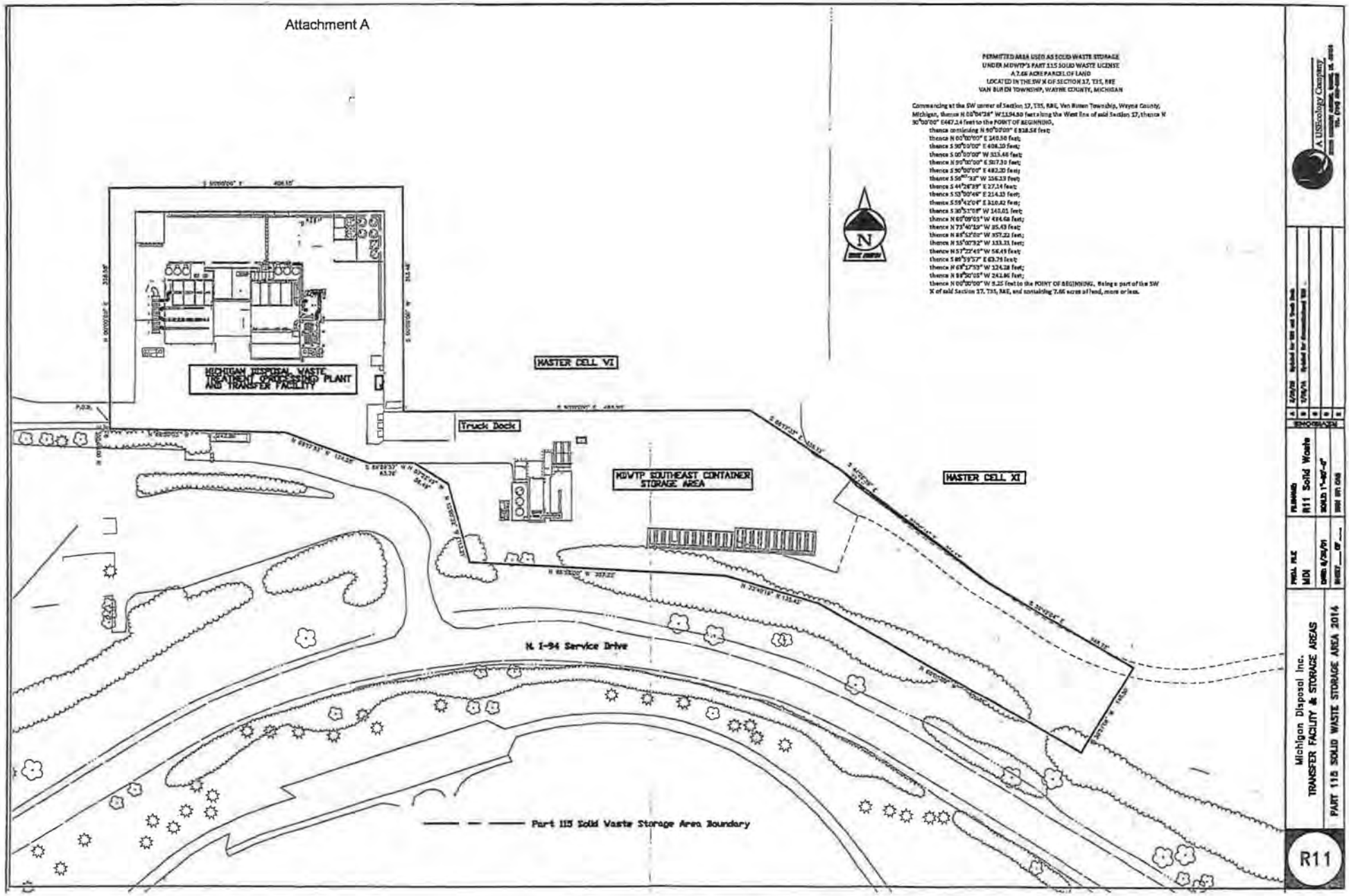
9. Modifications to approved engineering plans that constitute an upgrading, as defined in R 299.4106a(e), may be approved, in writing, by the EGLE's MMD Warren District Supervisor.

10. **SPECIAL CONDITIONS**: At the time of issuance of this license, the applicant is not required to conduct groundwater monitoring under Part 115 for the solid waste processing operations at the Facility based on the fact that all solid waste processing operations are conducted in an enclosed building with a properly sloped/contained concrete floor and the fact that the Facility is located within a larger parcel of land that includes a solid waste/hazardous waste landfill that is required to have a groundwater monitoring program.

11. **TERM**: This license shall remain in effect until its expiration date, unless revoked or continued in effect, as provided by the Administrative Procedures Act, 1969 PA 306, as amended, or unless superseded by the issuance of a subsequent license.

END OF LICENSE

Attachment A



Pennsylvania Department of Environmental Protection

400 Waterfront Drive
Pittsburgh, PA 15222-4745
February 14, 2005

Southwest Regional Office

412-442-4000
Fax 412-442-4194

CERTIFIED MAIL NO. 7000 1670 0005 1020 2405

Henry A. Springer, Jr., P.E.
Director of Compliance and Engineering
MAX Environmental Technologies, Inc.
233 Max Lane
Yukon, PA 15698

Re: MAX Environmental Technologies Yukon Facility
South Huntingdon Township
Westmoreland County
I.D. No. PAD004835146
APS No. 17626
Authorization No. 366436

Dear Mr. Springer:

Enclosed is Hazardous Waste Permit No. PAD004835146 for the operation of MAX Environmental Technologies, Yukon Hazardous Waste Storage and Treatment Facility issued in accordance with Article V of the Solid Waste Management Act, 35 P.S. Sections 6018.101, et seq. This action renews and modifies MAX's Hazardous Waste and Storage Treatment Permit. The permit is modified to authorize the construction and operation of a new liquid waste management system, expand the capacity of the proposed containment building, construct and operate new solid hazardous waste storage tanks, build and operate Container Storage Area 5 and manage EAF dust (Waste Code K061). The Department of Environmental Protection is also denying MAX Environmental Technologies request to accept mercury containing hazardous waste (Waste Code D009) reactive cyanide and reactive sulfide hazardous wastes (Waste Code D003) and the following listed hazardous wastes: F006-F009, F011, F012, F019, K064-K066, K090, K091 and K100 (electroplating, copper, lead, zinc and chromium production wastes).

Compliance with the terms and conditions set forth in the permit is mandatory. Please note that issuance of this permit does not eliminate the necessity to comply with all federal, state, or local requirements at the permitted facility. You have the right to file an appeal as to the terms and conditions of this permit.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S., Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental

Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER; SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions about the enclosed permit or requirements of the Solid Waste Management Act, please contact Carl Spadaro at 412-442-4157.

Sincerely,

Michael G. Forbeck, P.E.
Regional Manager
Waste Management

Enclosure

cc: Westmoreland County Dept. of Planning and Community Development (w/enclosure)
CERTIFIED MAIL NO. 7000 1670 0005 1020 2399
South Huntingdon Township Supervisors (w/enclosure
CERTIFIED MAIL NO. 7000 1670 0005 1020 2382
Andrew Clibanoff - US EPA Region III (w/enclosure)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

PERMIT
FOR
HAZARDOUS WASTE TREATMENT, STORAGE, AND/OR DISPOSAL FACILITY

Permit No. PAD004835146

Date Issued FEBRUARY 14, 2005

Date Expired FEBRUARY 14, 2015

Under the provisions of the Pennsylvania Solid Waste Management Act of July 7, 1980, Act 97, a permit for hazardous waste treatment, storage, and/or disposal facility in (municipality) S. HUNTINGDON in the County of WESTMORELAND is granted to (applicant) MAX ENVIRONMENTAL TECHNOLOGIES, INC (address) 1815 WASHINGTON ROAD PITTSBURGH, PA 15241

This permit is applicable to the facility named as MAX ENVIRONMENTAL TECHNOLOGIES, INC YUKON PLANT, 233 MAX LANE, YUKON PA 15698 and described as:

HAZARDOUS WASTE STORAGE/TREATMENT FACILITY

NEUTRALIZATION/PRECIPITATION, CHEMICAL REDUCTION/OXIDATION, OIL SEPARATION, SOLIDIFICATION, PHYSICAL STABILIZATION, DEWATERING, SCREENING/CRUSHING USING STORAGE/TREATMENT TANKS, STORAGE CONTAINERS, AND CONTAINMENT BUILDING.

This permit is subject to modification, amendment and supplement by the Department of Environmental Protection and is further subject to revocation or suspension by the Department of Environmental Protection for any violation of the applicable laws or the rules and regulations adopted thereunder, for failure to comply in whole or in part with the conditions of this permit and the provisions set forth in the application no. PAD004835146 which is made a part hereof, or for causing any condition inimical to the public health, safety or welfare.

See attachment for waste limitations and/or special conditions

FOR THE DEPARTMENT OF
ENVIRONMENTAL PROTECTION

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

February 6, 2015

CERTIFIED MAIL NO. 7013 3020 0000 7433 5006

Carl Spadaro
MAX Environmental Technologies, Inc.
1815 Washington Road
Pittsburgh, PA 15241

Re: Completeness Review Letter
Hazardous Waste Permit Renewal
MAX Environmental Technologies, Inc. - Yukon Facility
South Huntingdon Township
Westmoreland County
I.D. No. PAD004835146
APS No. 17626
Authorization No. 1039575

Dear Mr. Spadaro:

The Department of Environmental Protection (DEP) has reviewed, for completeness, the above referenced application received on August 19, 2014 and as modified by subsequent revisions received on February 3, 2015 in response to the Department's incompleteness letter dated December 12, 2014. The completeness review is the first step in a series of reviews conducted by DEP.

The Department has determined that the application package contains sufficient detail to enable DEP to conduct the technical review, and has been accepted for that purpose.

This is not a final action by the Department on this application. The completeness review is the first in a series of reviews conducted by DEP. The application will now move to the technical review stage of the permit review process. To follow your application through the review process, please visit *eFACTS on the Web* at:
http://www.ahs2.dep.state.pa.us/eFactsWeb/default.aspx.

I trust that you find this information helpful in understanding the permit review process. If you have additional questions about your application, please contact Chris Lovgren of my staff at

412-442-4151 or by email at clovgren@pa.gov and refer to Application No. PAD004835146, Authorization No. 1039575.

Sincerely,

Diane D. McDaniel, P.E.
Environmental Engineering Manager
Bureau of Waste Management

cc: Westmoreland County
South Huntingdon Township
Gary Brown, P.E. – RT Environmental Services Inc.
Andrea Barbieri – EPA Region III

RT Environmental Services, Inc.

August 18, 2014

Mr. Oscar Vasquez
Department of Environmental Protection
Bureau of Waste Management
Southwest Regional Office
400 Waterfront Drive
Pittsburgh PA 15222

RE: SUBMITTAL OF MAX YUKON
HAZARDOUS WASTE PERMIT RENEWAL APPLICATION
RT PROJECT# 5182-09

Dear Mr. Vasquez:

RT Environmental Services, Inc. (RT) is pleased to submit this Permit Renewal Application for the above – referenced facility. We have reorganized the permit application so as to be as meaningful as possible, to include:

- PowerPoint sections for training and inspection elements
- A separate section (XX, describing the proposed new hazardous waste storage building
- Used a tabular format to ease finding individual sections.

With respect to Module 9, related to environmental siting issues, the only issue which arose during the application preparation process is a Northern Long Eared Bat, but the area where the proposed building is to be constructed is already cleared, and there are no trees to be removed. Therefore, we believe there are no siting issues of concern.

Further, information from the public meeting which was held, including appropriate plans for dealing with any off-site issues which may arise are also included herein.

We look forward to working with the Department during the application review process. Should there be any questions, do not hesitate to call.

Very truly yours,

RT ENVIRONMENTAL SERVICES, INC.

Gary R. Brown, P.E.
President

CC: C. Spadaro – MAX
J. Lauterbach, QEP-Vice President - RT

G:\RT Projects\5100 series\5182-09\51820000.docx

215 West Church Road ▪ King of Prussia, PA 19406 ▪ (610) 265-1510 ▪ Fax: (610) 265-0687
E-Mail RTENV@AOL.COM ▪ Web Address http://www.RTENV.COM

APPENDIX D

FIELD FORMS AND OHARNG GUIDELINES

TETRA TECH

DAILY ACTIVITIES RECORD

PROJECT NAME:	**PROJECT NUMBER:**
CLIENT:	**LOCATION:**
DATE:	**ARRIVAL TIME:**
TETRA TECH PERSONNEL:	**DEPARTURE TIME:**
SUBCONTRACTOR:	**DRILLER:**

ITEM	QUANTITY ESTIMATE	QUANTITY TODAY	PREVIOUS TOTAL QUANTITY	CUMULATIVE QUANTITY TO DATE

COMMENTS:

APPROVED BY:

TETRA TECH REPRESENTATIVE

SUBCONTRACTOR

TETRA TECH

SITE PHOTOGRAPHIC LOG

Date:	**View:**	**Photographer:**

Date:	**View:**	**Photographer:**
.		

Date:	**View:**	**Photographer:**

Date:	**View:**	**Photographer:**

SITE PHOTOGRAPHIC LOG

SOIL & SEDIMENT SAMPLE LOG SHEET

TETRA TECH

Event: _____

Project Site Name: _____

Project No.: _____

Sample ID No.:	Sampled By:
Sample Location:	Sample Date:
QA/QC Duplicate ID:	MS/MSD Collected: YES NO

MATRIX / CONCENTRATION:

[ ] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Time:	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:			
Monitor Reading (ppm):			

MULTIPLE / COMPOSITE SAMPLE DATA:

Method: PID Readings (Range in ppm):

Sample ID	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

SAMPLE COLLECTION INFORMATION:

Analysis	Method	Preservative	Number	Vol.	Bottle Type	Collected

OBSERVATIONS / NOTES:

MAP:

Coordinates:	N	E	

Signature(s):

TETRA TECH

DAILY QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE Enter (DD/MMM/YY)

REPORT NO

PHASE | CONTRACT NO | CONTRACT TITLE

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☐ NO ☐

IF YES, FILL OUT AND ATTACH INITIAL PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☐ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☐ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location and List of Personnel Present

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above That Was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

AUTHORIZED QC MANAGER AT SITE DATE

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER DATE

TETRA TECH

PREPARATORY PHASE CHECKLIST (CONTINUED ON SECOND PAGE)		SPEC SECTION Enter Spec. Section # Here	DATE
CONTRACT NO	DEFINABLE FEATURE OF WORK	SCHEDULE ACT NO.	INDEX #

PERSONNEL PRESENT

GOVERNMENT REP NOTIFIED ____ HOURS IN ADVANCE YES ☐ NO ☐

NAME	POSITION	COMPANY/GOVERNMENT

SUBMITTALS

REVIEW SUBMITTALS AND/OR SUBMTTAL REGISTER. HAVE ALL SUBMITTALS BEEN APPROVED? YES ☐ NO ☐

IF NO, WHAT ITEMS HAVE NOT BEEN SUBMITTED? _____

ARE ALL MATERALS ON HAND? YES ☐ NO ☐

IF NO, WHAT ITEMS ARE MISSING? _____

CHECK APPROVED SUBMITTALS AGAINST DELIVERED MATERIAL (THIS SHOULD BE DONE AS MATERIAL ARRIVES.)

COMMENTS: _____

MATERIAL STORAGE

ARE MATERIALS STORED PROPERLY? YES ☐ NO ☐

IF NO, WHAT ACTION IS TAKEN? _____

SPECIFICATIONS

REVIEW EACH PARAGRAPH OF SPECIFICATIONS. _____

DISCUSS PROCEDURE FOR ACCOMPLISHING THE WORK. _____

CLARIFY ANY DIFFERENCES. _____

PRELIMINARY WORK & PERMITS

ENSURE PRELIMINARY WORK IS CORRECT AND PERMITS ARE ON FILE.

IF NOT, WHAT ACTION IS TAKEN? _____

TESTING	IDENTIFY TEST TO BE PERFORMED, FREQUENCY, AND BY WHOM. WHEN REQUIRED? WHERE REQUIRED? REVIEW TESTING PLAN. HAS TEST FACILITIES BEEN APPROVED?
SAFETY	ACTIVITY HAZARD ANALYSIS APPROVED? YES ☐ NO ☐ REVIEW APPLICABLE PORTION OF EM385-1-1.
MEETING COMMENTS	USACE/COR COMMENTS DURING MEETING.
OTHER ITEMS OR REMARKS	OTHER ITEMS OR REMARKS:

QC MANAGER DATE

TETRA TECH

INITIAL PHASE CHECKLIST

SPEC SECTION	DATE

CONTRACT NO	DEFINABLE FEATURE OF WORK	SCHEDULE ACT NO.	INDEX #

PERSONNEL PRESENT

GOVERNMENT REP NOTIFIED ____ HOURS IN ADVANCE YES ☐ NO ☐

NAME	POSITION	COMPANY/GOVERNMENT

PROCEDURE COMPLIANCE

IDENTIFY FULL COMPLIANCE WITH PROCEDURES IDENTIFIED AT PREPARATORY. COORDINATE PLANS, SPECIFICATIONS, AND SUBMITTALS.

COMMENTS

PRELIMINARY WORK

ENSURE PRELIMINARY WORK IS COMPLETE AND CORRECT. IF NOT, WHAT ACTION IS TAKEN?

WORKMANSHIP

ESTABLISH LEVEL OF WORKMANSHIP.

WHERE IS WORK LOCATED?

IS SAMPLE PANEL REQUIRED? YES ☐ NO ☐

WILL THE INITIAL WORK BE CONSIDERED AS A SAMPLE? YES ☐ NO ☐

(IF YES, MAINTAIN IN PRESENT CONDITION AS LONG AS POSSIBLE AND DESCRIBE LOCATION OF SAMPLE)

RESOLUTION

RESOLVE ANY DIFFERENCES.

COMMENTS:

CHECK SAFETY

REVIEW JOB CONDITIONS USING EM 385-1-1 AND JOB HAZARD ANALYSIS

COMMENTS:

OTHER

OTHER ITEMS OR REMARKS

QC MANAGER DATE

NON-COMPLIANCE REPORT

TETRA TECH

CONTRACTOR/RESPONSIBLE INDIVIDUAL FOR CORRECTIVE ACTION	NOTICE NUMBER
CONTRACT NUMBER AND TITLE	DATE
SPECIFICATION PARAGRAPH AND/OR DRAWING NUMBER	NON-COMPLIANCE DATE
REFERENCE (Shop Drawing, Certification, Work Plan, etc.)	
DESCRIPTION OF NON-COMPLIANCE	
METHOD FOR COMPLETING CORRECTIVE ACTION AND SCHEDULE	
CORRECTIVE ACTION IMPLEMENTATION/COMPLETION DESCRIPTION	

TETRA TECH SITE SUPERVISOR: NAME: _____ SIGNATURE: _____ DATE: _____	TETRA TECH QC MANAGER OR SITE QC REP: NAME: _____ SIGNATURE: _____ DATE: _____
USACE ACKNOWLEDGEMENT NAME: _____ SIGNATURE: _____ DATE: _____	USACE NOTES:

This Notice does NOT authorize any work not included in the contract and shall not constitute a basis for additional payment or time.

DISTRIBUTION

Original - Tetra Tech QC Manager (Original)

Copies to - Tetra Tech PM, USACE Representative or COR, Project File

FIELD CHANGE REQUEST

FCR NO. _____ DATE INITIATED _____
PROJECT _____
CONTRACT NO. _____

REQUESTOR IDENTIFICATION
NAME_____ ORGANIZATION _____ PHONE _____

TITLE _____ SIGNATURE

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☐ Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)

DESCRIPTION OF CHANGE:

JUSTIFICATION:

IMPACT OF NOT IMPLEMENTING REQUEST:

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:

COST ESTIMATE ($) __0__ ESTIMATOR SIGNATURE _____
PHONE_____ DATE _____

PREVIOUS FCR AFFECTED ☐ YES ☐ NO; IF YES, FCR NO. ___

USACE COTR: _____ DATE: _____

OHIO EPA PROJECT MANAGER: _____ DATE: _____

RELEASE OF RAIN WATER FROM SECONDARY CONTAINMENT

1. Date:_____

2. Building/Reference Number and Site Location: _____

   _____

   _____

3. What is the water level height (in inches) inside the containment area?_____

4. Is a hydrocarbon (POL) sheen noted on the surface of the water? .....Yes / No

5. Is a hydrocarbon (POL) odor noted for the water?.....Yes / No

6. If hydrocarbons (POL) present, what action was taken to remove the hydrocarbons prior to releasing the water (or was the water removed for off-site treatment and disposal)?

   _____

   _____

7. What was the approximate volume of water released from the containment (gallons or cubic feet)?

   _____

   _____

8. Following the release of the water, was the valve locked in the closed position and functioning (or drain plug screwed in)? ……. Yes / No

9. Note any deficiencies and action taken to have them corrected, including notification to Camp Ravenna Range Control (614-336-6041) and Environmental (6568) if POL was released to the environment.

   _____

   _____

   _____

10. Person(s) who completed this form: _____

    Phone: _____

SECONDARY CONTAINMENT INSPECTION FORM

1. Date:_____

2. Building/Reference Number and Site Location: _____

   _____

3. Are the access panels locked and secure? Yes / No

4. Are the valves and/or drain plugs intact and functional? ..... Yes / No

5. Are there two filters located at drainage points? ..... Yes / No

6. Are the filters saturated with POL or otherwise non-functional? ..... Yes / No

7. If yes to 6, did you replace the filters (if no explain in 14 below)? …… Yes / No

8. Is the system intact with no noticeable breaches? …….Yes / No

9. Are the ramps in place? …… Yes / No

10. Is the system grounded? ……..… Yes / No

11. Is there water in the system? …… Yes / No

12. If yes on question 10, Complete "Release of Rain Water from Secondary Containment" form.

13. Is the system functional and acceptable for use? …… Yes / No

14. Note any deficiencies and action taken to have them corrected, including notification to Camp Ravenna Logistics (614-336-6790) and Environmental (6568) if the system is not functional and needs to be dead lined.

    _____

    _____

    _____

15. Person(s) who completed this form: _____ Phone: _____

Stormwater Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Describe present phase of construction			

Type of Inspection:
❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		❑Yes ❑No	❑Yes ❑No	
2		❑Yes ❑No	❑Yes ❑No	
3		❑Yes ❑No	❑Yes ❑No	
4		❑Yes ❑No	❑Yes ❑No	
5		❑Yes ❑No	❑Yes ❑No	
6		❑Yes ❑No	❑Yes ❑No	
7		❑Yes ❑No	❑Yes ❑No	
8		❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
5	Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
11	Are non-stormwater	❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
	discharges (e.g., wash water, dewatering) properly controlled?			
12	Are spoil piles stabilized with vegetations and/or contained by silt fence or other appropriate and required controls?	❑Yes ❑No	❑Yes ❑No	
13	Are wastes properly stored with no risk of discharge?	❑Yes ❑No	❑Yes ❑No	
14	(Other)	❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

Prepared By **Date**

Reviewed By **Date**

US Army Corps of Engineers

Site: RVAAP-

Manifest Log

Date of Generation	Disposal Date	Type of Waste	Source/ Location	Transporter	Truck License No.	Disposal Facility	Waste Profile No.	Manifest Document No.	Facility Quantity (tons)	Copy of initial manifest received (Y/N)	Final Signed Manifest Received from Landfill (Y/N)	Notes

Completed by: _____

Inspection Sheet

INSPECTIONS MUST BE CONDUCTED ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL. ALL SEDIMENT CONTROLS MUST BE INSTALLED PRIOR TO GRADING AND WITHIN 7 DAYS OF FIRST GRUBBING

GENERAL INSPECTION INFORMATION

Construction Site Inspection Date: _____ Inspector Name: _____

Inspector Title: _____ Qualifications/Certifications: _____

Storm Events of the Last 7 Days

Storm Event Date	Storm Event Time	Storm Event Duration	Total Rainfall Amount	Discharge Occur? (Y/N)
_____	_____	_____	_____(inches)	_____
_____	_____	_____	_____(inches)	_____
_____	_____	_____	_____(inches)	_____
_____	_____	_____	_____(inches)	_____

Weather Information at the Time of Inspection

Temperature _____ Climate (Sunny, Cloudy, Rain)? _____ Is Storm Water Being Discharged? _____

Sketch or Small Site Map

Along with a narrative inspection log, Ohio EPA recommends the inspector use a sketch or a reduced photocopy of the site plan showing the location of storm water outfalls and storm drain inlets as well as the location and types of control measures. Problems observed at these locations, or at other locations on the construction site, should be highlighted and any corrective measures undertaken should be drawn in and noted in detail on the front side of the sketch. This method will also be helpful as the permittee is required to update the SWP3 to reflect current site conditions.

CONSTRUCTION ENTRANCES

Key things to look for ...

	Yes	No
1. Has the drive been constructed by placing geotextile fabric under the stone?	☐	☐
2. Is the stone 2-inch diameter?	☐	☐
3. Has the stone been placed to a depth of 6 inches, with a width of 10 feet and a length of at least 50 feet (30 feet for entrances onto individual sublots)?	☐	☐
4. If the drive is placed on a slope, has a diversion berm been constructed across the drive to divert runoff away from the street or water resource?	☐	☐
5. If drive is placed across a ditch, was a culvert pipe used to allow runoff to flow across the drive?	☐	☐

Note areas where repairs or maintenance is needed or where this practice needs to be applied:

SEDIMENT BARRIERS

Key things to look for ...

	Yes	No
1. Is the silt fence at least 4" to 6" into the ground?	☐	☐
2. Is the silt fence trench backfilled to prevent runoff from cutting underneath the fence?	☐	☐
3. Is the silt fence pulled tight so it won't sag when water builds up behind it?	☐	☐
4. Are the ends brought upslope of the rest of the silt fence so as to prevent runoff from going around the ends?	☐	☐
5. Is the silt fence placed on a level contour? If not, the fence will only act as a diversion.	☐	☐
6. Have all the gaps and tears in the silt fence been eliminated.	☐	☐
7. Is the sediment barrier controlling an appropriate drainage area? Refer to Chapter 6 of ***Rainwater*** manual. **RULE OF THUMB**: Design capacity for 100 linear feet of sediment barrier is 0.5 acres for slopes < 2%, 0.25 acres for slopes 2% to 20%, & 0.125 acres for slopes 20% or more. Generally, no more than 0.25 acres should lie behind 100 feet of sediment barrier at 2% to 20% slope, i.e., the distance between the barrier and the top of the slope behind it should be no more than 125 feet. The allowable distance increases on flatter slopes and decreases for steeper slopes. **All non-silt fence sediment barriers must be at least 12-inches in diameter.**	☐	☐

Note areas where repairs or maintenance is needed or where this practice needs to be applied:

Note areas where repairs or maintenance is needed or where this practice needs to be applied:

TEMPORARY STABILIZATION

Key things to look for ...

	Yes	No
1. Are there any areas of the site that are disturbed, but will likely lie dormant for over 14 days?	☐	☐
2. Have all dormant, disturbed areas been temporarily stabilized in their entireties?	☐	☐
3. Have disturbed areas outside the silt fence been seeded or mulched?	☐	☐
4. Have soil stockpiles that will sit for over 14 days been stabilized?	☐	☐
5. Has seed and mulch been applied at the proper rate? In general, seed is applied at 3 to 5 lbs per 1000 sq ft and straw mulch is applied at 2-3 bales per 1000 sq ft.	☐	☐
6. Has seed or mulch blown away? If so, repair.	☐	☐

Note areas where repairs or maintenance is needed or where this practice needs to be applied:

PERMANENT STABILIZATION

Key things to look for ...

	Yes	No
1. Are any areas at final grade?	☐	☐
2. Has the soil been properly prepared to accept permanent seeding?	☐	☐
3. Has seed and mulch been applied at the appropriate rate (see Chapter 7 of the ***Rainwater*** manual)?	☐	☐
4. If rainfall has been inadequate, are seeded areas being watered?	☐	☐
5. For drainage ditches where flow velocity exceeds 3.5 ft/s from a 10-year, 24-hour storm has matting been applied to the ditch bottom?	☐	☐
6. If the flow velocity exceeds 5.0 ft/s, has the ditch bottom been stabilized with rock rip-rap? **NOTE**: Rock check dams may be needed to slow the flow of runoff.	☐	☐
7. Has rock rip-rap been placed under all storm water outfall pipes to prevent scouring in the receiving stream or erosion of the receiving channel?	☐	☐
8. For sites with steep slopes or fill areas, is runoff from the top of the site conveyed to the bottom of the slope or fill area in a controlled manner so as not to cause erosion?	☐	☐

Note areas where repairs or maintenance is needed or where this practice needs to be applied:

NON-SEDIMENT POLLUTION CONTROL

Key things to look for ...

	Yes	No
1. Has an area been designated for washing out concrete trucks? Washings must be contained on site within a bermed area until they harden. The washings should never be directed toward a watercourse, ditch or storm drain.	☐	☐
2. Is waste and packaging disposed of in a dumpster? Do not burn them on site.	☐	☐
3. Are fuel tanks and drums of toxic and hazardous materials stored within a diked area or trailer and away from any watercourse, ditch or storm drain?	☐	☐
4. Are streets swept as often as necessary to keep them clean and free from sediment? NOTE: Sediment should be swept back onto the lot - not down the storm sewers.	☐	☐
5. Are stockpiles of soil or other materials stored away from any watercourse, ditch or storm drain?	☐	☐
6. Have stream crossings been constructed entirely of non-erodible material?	☐	☐
7. If an area of the site is being dewatered, is it being pumped from a sump pit or is the discharge directed to a sediment pond? **NOTE**: if you must lower ground water, the water may be discharged to the receiving stream as long as the water remains clean. Be sure not to co-mingle the clean ground water with sediment-laden water or to discharge it off-site by passing it over disturbed ground.	☐	☐

Note areas where repairs or maintenance is needed or where this practice needs to be applied:

Construction Site Inspection Checklist for OHC000005

By making use of some simple Best Management Practices (BMPs) a construction site operator can do his or her share to protect Ohio's water resources from the harmful effects of sediment. The topography of the site and the extent of the construction activities will determine which of these practices are applicable to any given site, but the BMPs listed here are applicable to most construction sites. For details on the installation and maintenance of these BMPs, please refer to the current ***Rainwater and Land Development****, Ohio EPA's Standards for Storm Water Management Land Development and Urban Stream Protection*. The manual is available at http://epa.ohio.gov/dsw/storm/technical_guidance.

Temporary Stabilization

This is the most effective BMP. All disturbed areas that will lie dormant for over 14 days must be stabilized within 7 days of the date the area becomes inactive. The goal of temporary stabilization is to provide cover, quickly. Areas within 50 feet of a stream must be stabilized within 2 days of inactivity. This is accomplished by seeding with fast-growing grasses then covering with straw mulch. Apply only mulch between November 1 and March 31. To minimize your costs of temporary stabilization, leave natural cover in place for as long as possible. Only disturb areas you intend to work within the next 14 days.

Construction Entrances

Construction entrances are installed to minimize off-site tracking of sediments. A stone access drive should be installed at every point where vehicles enter or exit the site. Every individual lot should also have its own drive once construction on the lot begins.

Sediment Ponds

Sediment ponds are required for construction areas with concentrated runoff or when the design capacity of silt fence or inlet protection is exceeded. There are two types of sediment ponds: sediment basins and sediment traps. A sediment trap is appropriate where the contributing drainage area is 5 acres or less. The outlet is an earthen embankment with a simple stone spillway. A sediment basin is appropriate for drainage areas larger than 10 acres. The outlet is an engineered riser pipe with a skimmer or similar device used to dewater the pond at the surface. Often a permanent storm water management pond, such as a retention or detention basin, can be modified to act as a sediment basin during construction. All sediment ponds must be installed within 7 days of first grubbing the area they control, provide a minimum dewatering zone of 67 cubic yards per acre of total contributing drainage area and a sediment settling zone of 34 cubic yards per disturbed acre below the level of the outlet. Sediment basins must be designed to drain the dewatering zone over a 48-hour period.

Sediment Barriers

This is typically used at the perimeter of a disturbed area. It's only for small drainage areas on relatively flat slopes or around small soil storage piles. Not suitable where runoff is concentrated in a ditch, pipe or through streams. For large drainage areas where flow is concentrated, collect runoff in diversion berms or channels and pass it through a sediment pond prior to discharging it from the site. Combination barriers constructed of silt fence supported by straw bales or silt fence embedded within rock check dams may be effective within small channels. As with all sediment controls, sediment barriers must be capable of pooling runoff so that sediment can settle out of suspension. Sediment barriers must be installed within 7 days of first grubbing the area it controls.

Inlet Protection

This must be installed on all yard drains and curb drains when these inlets do not drain to a sediment trap or basin. Even if there is a sediment trap or basin, inlet protection is still recommended, as it will increase the overall sediment removal efficiency. These are best used on roads with little or no traffic. If working properly, inlet protection will cause water to pond. If used on curb inlets, streets will flood temporarily during heavy storms. Check with your municipality before installing curb inlet protection. They may prefer an alternate means of sediment control such as silt fence or ponds.

Permanent Stabilization

All areas at final grade must be permanently stabilized within 7 days of reaching final grade. This is usually accomplished by using seed and mulch, but special measures are sometimes required. This is particularly true in drainage ditches or on steep slopes. These measures include the addition of topsoil, erosion control matting, rock rip-rap or retaining walls. Permanent seeding should be done March 1 to May 31 and August 1 to September 30. Dormant seeding can be done from November 20 to March 15. At all other times of the year, the area should be temporarily stabilized until a permanent seeding can be applied.

Non-Sediment Pollution Control

Although sediment is the pollutant of greatest concern on most construction sites, there are other sources of pollution. Most of these BMPs are easy to implement with a little bit of planning and go a long way toward keeping your site clean and organized. Please be sure to inform all contractors how these BMPs affect their operations on the site, particularly those that will be working near a stream.

OHARNG Environmental Procedures
Restoration Program Specific Version
15 July 2022

1. General

1.1. These Environmental Procedures identify environmental compliance requirements for Ohio Army National Guard (OHARNG) projects. The Environmental Procedures are intentionally broad in scope to ensure contractors have information needed to price and complete work knowing all the requirements. Contractors conducting work not specified in these procedures are considered to be in compliance with no specific action required.

1.2. The Contractor must comply with all applicable local, state, and federal environmental requirements to include applicable Army and OHARNG regulations. This includes, but is not limited to, the proper characterization, management and disposal of wastes; proper storage, use and transportation of hazardous materials; spill prevention and clean up; obtaining proper permits and submitting proper notifications as applicable to the work being conducted; and protection of surface water and natural resources.

1.3. The Contractor (to include subcontractors) will not correspond with any regulatory agency regarding an OHARNG project without approval of the OHARNG. This includes meetings, phone calls, emails, permit/application submittals, or other written or verbal communications. The OHARNG will review and approve all correspondence, to include permit applications and notifications, before they are sent to a regulatory agency to include but not limited to the federal or Ohio Environmental Protection Agency (EPA), the US Fish and Wildlife Service, the Ohio Historic Preservation Office, the US Army Corps of Engineers, County Engineer offices, and local Soil and Water Conservation offices.

1.4. The Contractor is responsible for paying all fees and acquiring all applicable permits or regulatory approvals associated with the work they are performing. Depending upon the permit/notification, it may need to be issued in the OHARNG's name. Coordination will be done with the OHARNG to determine this and as applicable the Contractor will complete the application/notification for OHARNG signature and submit the application and associated fees. All permit submittals will be coordinated, reviewed and approved by the OHARNG before submittal regardless of who signs the application.

1.5. Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*, establishes a federal integrated strategy toward sustainability including efforts to "eliminate waste, recycle, and prevent pollution." Additionally, EO 13693 establishes targets to divert at least 50% of non-hazardous solid waste, including construction and demolition debris, from the waste stream. The Contractor will utilize the most current waste prevention, waste diversion (salvage, reuse, recycle), and waste minimization guidelines to ensure this target is met.

2. Emergency Spill Response and Petroleum, Oil, and Lubricant (POL) Management

2.1. The Contractor must comply with the local OHARNG Spill Contingency Plan and implement appropriate measure to prevent spills/releases to the environment and to respond, notify, and report when a release occurs. The Contractor is required to inspect equipment, fuel, and hazardous materials storage areas to ensure there are no leaks or releases. The Contractor is responsible for implementing spill response and cleanup of all spills/leaks within the project area immediately upon discovery. Clean up must be satisfactory to the OHARNG and/or the Ohio EPA or other applicable regulatory agency. Wastes will be managed as described in the waste management section of these Environmental Procedures.

2.2. The OHARNG will be notified of all spills/releases. Incidental releases (petroleum product less than 25 gallons, a release that stays of OHARNG property, not in water, and not a reportable quantity) will be responded to by the contractor and the OHARNG notified by telephone within 2-hours. Any spill of petroleum products over 25 gallons, a spill that goes off of OHARNG property, a spill of any amount into a body of water, or a reportable quantity release must be reported to the OHARNG **immediately**. All spills/releases must be reported in writing on the OHARNG Spill Report Form (Attachment 1) and submitted to the OHARNG within 24 hours. The Contractor will be provided with a copy of the OHARNG Spill Report Form and a point of contact for submitting such reports/notifications.

2.3. The Contractor is required to have a spill kit with appropriate absorbents, plastic bags, drums, shovels, and other supplies and equipment suitable to clean up any releases or spills from their activities.

2.4. Contractor stationary fuel pods must be in/on secondary containment with a storage capacity of 110% of the container. A double walled container is sufficient secondary containment. Releases of rain water from secondary containment can only be initiated after approval from the OHARNG Environmental Office and after inspection and verification/absorption of all petroleum, oil, and lubricants (POL) and/or other contaminants in the water by the Contractor. Discharge of POL or other contaminants/pollutants from secondary containment is not permitted. At minimum, discharging through an oil only boom/filter or an oil absorption filter bag is required. If the contractor cannot show proof of lack of contaminants, the water will need to be sampled and characterize to determine the proper discharge/disposal method. The contractor will document all discharges/disposal from secondary containments to include name and signature of person conducting discharge/disposal, date of discharge/disposal, volume discharged/disposed, method of discharge/disposal, method of determining water was clean to discharge (analytical result if applicable), and a statement that any discharge did not contain POL or other contaminants. Discharges from secondary containment will be addressed in the Waste Management Section of the Work Plan.

2.5. Individual fuel/POL cans (5 gallon or less) and hazardous materials used on job sites must be stored in a manner that prevents release to the environment. This will usually involve a covered storage area with appropriate secondary containment that protects them from rain and accidental damage. Chainsaw fuel and bar oil on logging jobs can be left at the tree felling site in the woods or brought out to the log landing each day.

3. Erosion Control, Storm Water and Other Surface Water Management

3.1. For all projects, regardless of the disturbance acreage, the Contractor will use all methods appropriate and required to prevent soil from leaving the project site either by wind, water, or on vehicles and equipment. Silt fence and other temporary soil run off detention methods will be used as needed. Spoil piles and disturbed areas will be managed in accordance with the stipulations outlined in the Ohio EPA General National Pollutant Discharge Elimination system (NPDES) Storm Water Construction Permit and the most current version of the Ohio Department of Natural Resources' Rainwater and Land Development Manual; Ohio's Standards for Storm Water Management, Land Development, and Urban Stream Protection (available on-line). The site must be seeded with a temporary seed mix if left idle for the designated period of time. The project site will be closed out by preparing the soil as a seed bed and seeding and mulching with the appropriate seed mix. Temporary erosion control measures (silt fence) will be removed by the contractor once vegetation has been established and soil on the project area is stabilized.

3.2. Native seed mixes will be used and compatible with maintenance requirements. An appropriate turf grass mix will be used for high traffic and high maintenance areas. Annual ryegrass can be added to mixes to provide quick cover. For late season seeding, winter wheat/rye can be added to provide a quick cover. Contractors will use the approved grass seed mixes listed below or propose alternative seed mixes. The OHARNG Environmental Office must approve all seed mixes. The seed mixes that will be used will be identified in the Storm Water Management, Sediment, and Erosion Controls section of the Environmental Work Plan.

The following seed is approved for establishment of temporary cover. Species can be mixed if/as necessary for specific application.

- Annual Rye Grass (*Lolium multiflorum*), broadcast @ 40 lbs/acre, drilled at 30 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Use mulch netting or fiber mat on slopes greater than 6%. Grows quickly but of short duration. Good growth during hot summer period.

- Winter Rye (*Secale cereal)* broadcast @ 112 lbs/acre, drilled at 80 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Use mulch netting or fiber mat on slopes greater than 6%. Good for fall seeding. Select a hardy variety.

- Oats (*Avena sativa*) broadcast @ 80 lbs/acre, drilled at 65 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Use mulch netting or fiber mat on slopes greater than 6%. Best for spring seeding. Fall seeding will die when winter sets in.

- 40% Nodding Wild Rye (*Elymus canadensis*), 40% Virginia wild rye (*Elymus virginicus*), 15% Partridge Pea (*Chamaecrista fasciculata*), and 5% Black-eyed Susan (*Rudbeckia hirta*), broadcast @ 35 lbs/acre, drilled at 25 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. Good for areas that will remain unfinished indefinitely.

- 23.5% Nodding Wild Rye (*Elymus canadensis*), 25% Virginia wild rye (*Elymus virginicus*), 18.75% Partridge Pea (*Chamaecrista fasciculata*), 1.5% Black-eyed Susan (*Rudbeckia hirta*), and 31.25% Little Bluestem (*Schizachyrium scoparium*), broadcast @ 25 lbs/acre, drilled at 18 lbs/acre), mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. Good for late season (after 15 September) quick temporary cover.

The following seed is approved for establishment of permanent cover in areas that are not maintained as turf grass or high foot traffic areas such as range impact areas that are not regularly mowed, roadsides outside of cantonment areas, fence lines outside of cantonment areas, etc. Substitution with similar species is permitted but must be approved by the OHARNG Environmental Office.

- 23.5% Nodding Wild Rye (*Elymus canadensis*), 25% Virginia wild rye (*Elymus virginicus*), 22% Little Bluestem (*Schizachyrium scoparium*), 18.75% Partridge Pea (*Chamaecrista fasciculata*), 7.75% Thin-leaved Coneflower (*Rudbeckia triloba*), 1.5% Brown fox sedge (*Carex vulpinoidea*), 1.5% Black-eyed Susan (*Rudbeckia hirta*), broadcast @ 18 lbs/acre, drilled at 12 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. This mix is for use in open areas that receive good sunlight.

- 31% Deertongue (*Dichanthelium clandestinum*), 25% Virginia wild rye (*Elymus virginicus*), 25% Nodding Wild Rye (*Elymus canadensis*), 10% Big Bluestem (*Andropogon gerardii*), and 9% Side-Oats Grama (*Bouteloua curtipendula*), broadcast @ 30 lbs/acre, drilled at 20 lbs/acre), mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. This mix is for use in shaded areas, partial sun, and openings in the forest canopy.

Areas that are maintained with regular mowing during the growing season and receive heavy foot traffic will be seeded with an appropriate turf grass mix. Such areas include lawns in cantonment areas, parade fields, and range operational control areas (ROCAs). Turf grass mixes of Kentucky blue grass, fine fescue, and perennial ryegrass using varieties appropriate for the specific application will be identified by the contractor and reviewed and approved by the OHARNG prior to application.

Contractors will provide draught resistant varieties in seed mixes. A potential mix and varieties are as follows.

- 40% Kentucky Bluegrass (applicable varieties), 30% Perennial Ryegrasses (applicable varieties), 20% Hard Fescue (applicable varieties), and 10% Creeping Red Fescue (applicable varieties)

3.3. For projects that disturb one (1) or more acres of ground (or otherwise meet the Ohio EPA criteria for permit coverage), the contractor is required to have a Storm Water Pollution Prevention Plan (SWP3) and should be included in the Work Plan. The Contractor is responsible for the development of Erosion and Storm Water Control (E&S) Plans and Details and the subsequent development of a Storm Water Pollution Prevention Plan (SWP3) in accordance with the requirements contained in the Ohio EPA General NPDES Permit for Storm Water Discharges Associated with Construction Activity. The Contractor will ensure that E&S controls and permanent post construction / water quality controls comply with Section 438 of the Energy Independence and Security Act of 2007 (EISA) and the latest version of the Ohio Department of Natural Resources publication titled **"Rainwater and Land Development - Ohio's Standards for Storm Water Management and Land Development and Urban Stream Protection" (available on-line)**.Most CERCLA projects do not require coverage under a applicable stormwater permit but all substantive requirements of the Ohio EPA General Permit for Construction Activities must be followed.

3.4. The Contractor will implement the SWP3 and conduct all inspections and maintain storm water/erosion controls in accordance with the SWP3 and Ohio EPA requirements. The Contractor will use the inspection checklist for storm water controls in the SWP3 or the Ohio EPA inspection checklist from the General Permit and will complete and maintain signed inspections on site in the SWP3 binder. Copies of weekly/post storm event inspections will be provided to the OHARNG project manager and Environmental Office monthly. The Contractor will notify the OHARNG project manager and Environmental Office immediately if there is a storm water control failure and off site discharge from the project area. Any proposed changes to the SWP3 must be coordinated with and approved by the OHARNG. The person conducting the stormwater inspections must be competent and well versed and have experience in stormwater management and inspections and proof of experience must be provided in the SWP3. The Contractor must keep a corrective action log during the project and document all deficiencies and corrective actions.

3.5. The Contractor will use best management practices or whatever means necessary to prevent contamination of storm water due to runoff from wastes, debris piles, fuel tanks, materials, equipment, and other storage/materials on the project site.

3.6. The Contractor is not permitted to disturb or fill any wetlands, streams, or other surface waters while performing tasks within the scope of work unless such disturbance or fill is specifically identified as a task in the scope and applicable permits and authorizations have been obtained. The Contractor will maintain a 30 foot undisturbed buffer around wetlands and depressional areas that hold water and will keep all equipment, materials, vehicles, debris, waste, and personnel out of this buffer and prevent discharges of any type (chemical or soil) from entering such areas.

3.7. The OHARNG Environmental Office must approve all dewatering activities. Dewatering will be addressed in the waste management section or dewatering section of the Work Plan if applicable to the project. Standing water must be characterized to determine if it is regulated before dewatering procedures are implemented. Characterization may be possible by generator knowledge or may require sampling and analysis. At minimum, discharges must meet water quality standards identified in Ohio Administrative Code 3745-1 and Ohio EPA requirements. If able to be discharged, at minimum, water must go through an oil absorption and/or an activated charcoal, and/or a sediment filter bag as appropriate, prior to being discharged. Discharge will be done in a vegetated upland area that drains away from the work site unless otherwise specified in the scope of work or authorized by the OHARNG Environmental Office. Discharge will be done so as to

allow the discharge to filter through dense groundcover vegetation. The discharge hose will be set on a piece of plywood or rubber mat to disperse the water and prevent a concentrated discharge that can cut and erode soil. Direct discharge to a stream, pond, wetland, ditch or other body of water or conveyance is not permitted. If water does not meet state standards or approval for discharge, then it must be properly transported and disposed.

4. Waste, Recycling and Hazardous Waste

4.1. The OHARNG is the generator of all waste including wastes generated by any Contractor working on OHARNG projects of facilities. The Contractor is responsible for minimizing all waste generation from OHARNG projects and for properly managing all wastes generated from OHARNG projects in accordance with the Ohio Army National Guard Waste Management Guidelines (attached). Waste will be managed in accordance with all applicable Federal, State, U.S. Army, NGB and OHARNG regulations and requirements. OHARNG sites may have specific hazardous waste information / management guidelines that must be followed to ensure compliance with applicable regulations and requirements. The contractor must include all waste management in their Work Plan and coordinate all waste generation and management activities with the OHARNG Environmental Office prior to beginning work.

4.2. The Contractor is responsible for characterizing all waste generated from a project and notifying the OHARNG of all waste streams, management methodology, and disposal methods prior to beginning work. If an alternative practice is available that will eliminate, recycle or minimize waste generation, the contractor is required to implement such practice.

4.3. The Contractor is responsible for properly labeling, storing, and inspecting non-hazardous, special, and hazardous waste stored at the project site pending disposal. All containers on the project site will be labeled as to the contents, whether waste or otherwise. All waste stored on site must be inspected weekly using the Ohio Army National Guard Weekly Non-Hazardous and Hazardous Waste Inspection/Inventory Sheet (attached).

4.4. The Contractor is responsible for properly completing all waste profiles, waste manifests, and shipping documents (hazardous, special and non-hazardous waste). Such documents will be reviewed, approved, and signed by the OHARNG Environmental Office. No waste will leave the site until the shipping documents are reviewed, approved and signed by the OHARNG Environmental Office. The Contractor is responsible for weighing and documenting all waste material (regulated, diverted, landfilled) leaving the site. The Contractor will complete a Construction/Demolition Diversion and Waste Disposal Form (attached) or other waste tracker and provide supporting documentation (weight tickets, manifests etc.) to the OHARNG at the end of the project. Contractors may be asked to provide monthly waste totals for waste total reporting and for monthly Ohio EPA update reports.

4.5. The Contractor is required to recycle materials when possible and practicable. Recycled materials must be tracked using the Construction/Demolition Diversion and Waste Disposal Form (attached). Materials that cannot be recycled or repurposed must be properly disposed at an appropriate waste handling facility.

4.6. The Contractor is required to utilize qualified Defense Logistics Agency (DLA), Defense Marketing and Reutilization Organization (DRMO) waste haulers and Treatment, Storage, and Disposal Facilities (TSDFs) for hazardous waste. The current qualified waste hauler and TSDF list can be viewed by following the "Qualified Facilities" and "Qualified Transporters" links found on the DLA Disposition Services' Hazardous Waste Disposal Homepage, http://www.dla.mil/DispositionServices/Offers/Disposal/HazardousWaste/HazWasteDisposal.aspx.

4.7. Gray water, vehicle wash water, and other liquid wastes (to include extracted groundwater and water from dewatering) generated by the Contractor will be managed in accordance with the waste management guidance in this section and applicable federal, state, and local regulations. Liquid waste will not be discharged to the land surface, surface water, storm drain/ditch, or a sanitary sewer unless properly characterized and done in accordance with applicable laws and applicable permit conditions. Liquid waste will be characterized and proper management and disposal methods identified and implemented. Guidance on construction site dewatering is provided above.

5. Asbestos

5.1. All asbestos activities, including any disturbance or removal, must be conducted in accordance with applicable Federal, State, and local regulations. Asbestos must be properly handled, removed, containerized, and disposed of in accordance with applicable Federal, State, and local regulations. The Contractor will complete a Construction/Demolition Diversion and Waste Disposal Form (attached) and provide supporting documentation (weight tickets, manifests etc.) for all wastes generated to the OHARNG at the end of the project. Asbestos removal methods and disposal operations will be detailed in the Work Plan to be reviewed and approved by the OHARNG Environmental Office prior to the start of work activities. All abatement activities will be conducted by a licensed abatement contractor in accordance with applicable Federal, State, and local regulations and guidance. All asbestos wastes generated as part of demolition activities and/or abatement activities must be disposed of in a licensed asbestos landfill. Disposal manifests and/or Regulated Asbestos Material Waste Shipment Records for all asbestos waste must also be signed and approved by an OHARNG Environmental Office representative or a representative designated by the Environmental Office prior to shipment from the project site or OHARNG facility.

5.2. As required for asbestos projects, the Contractor is required to submit a completed Ohio Environmental Protection Agency (EPA) Notification of Demolition and Renovation Form to the OHARNG for review and approval 30 days prior to commencement of asbestos work. Upon receipt of written approval from the OHARNG Environmental Office, the approved notification and associated notification fee must be submitted to the Ohio EPA at least 10 business days prior to commencement of work. Under no circumstances is the Contractor to submit any correspondence to the Ohio EPA or any other regulatory agency without written approval from the OHARNG. Copies of all correspondence from the Ohio EPA or any other regulatory agency must be submitted to the OHARNG Environmental Office upon receipt. If requested, the Contractor must provide a copy of the asbestos survey to the regulatory agency.

5.3. The Contractor is required to develop and submit a Work Plan that includes asbestos abatement to the OHARNG for review and approval prior to the commencement of work. The work plan will specify the procedures to be utilized by the contractor to ensure compliance with all applicable State and Federal asbestos regulations. The work plan will address the abatement techniques to be used, the safety precautions to be taken, and emergency procedures to be implemented in the event of inadvertent exposure. Proof/copies of proper and current contractor licensure must also be included in the work plan. The work plan will also address how the asbestos waste is to be handled, stored, transported, and disposed of in accordance with all applicable regulations. Site clearance procedures must be addressed in the plan if applicable. The plan must contain a detailed description of the project activities, including the amount of asbestos to be abated, the exact location and type of asbestos, and whether or not a contained work site will be established as required by 29 CFR Part 1926.1101.

5.4. Asbestos contractors must be properly licensed in accordance with applicable local, State, and Federal regulations. Only licensed contractors approved and licensed through the Ohio EPA will be utilized on OHARNG asbestos abatement projects. The contractor will show proof of license and will maintain appropriate paperwork on the work site at all times. Work is to be performed in accordance with 29 CFR 1926.1101 (OSHA Asbestos Construction Standard) and 40 CFR Part 61 (Asbestos NESHAPS) in addition to accepted industry work procedures and other applicable local, State, and

Federal regulations. The onsite Superintendent must be a 'competent person' as defined in 29 CFR 1926.1101(b) and must be onsite full time during the project.

5.5. The Contractor is responsible for managing all asbestos waste generated during the project. Any asbestos removed must be properly abated, containerized, managed, labeled and disposed of as an asbestos waste in accordance with applicable local, State, and Federal regulations. Asbestos waste must be properly transported to an approved, licensed asbestos disposal facility. Waste shipment records must be maintained during transport. A final copy of the waste shipment record will be forwarded to the OHARNG within 30 days for recordkeeping. A representative from the OHARNG Environmental Office will review and sign all waste profiles and manifests generated as the result of any asbestos abatement activities prior to the shipment of the waste from an OHARNG facility to a disposal facility.

6. Earth Fill

6.1. Any earth fill brought on site must be free of chemical contaminants and organic material (plant or animal parts). The contractor will identify the source of earth fill in the Work Plan.

6.2. Fill material must be sampled prior to coming onsite. One sample will be collected using incremental sampling methodology (ISM) or composite sampling for every 4,000 cubic yards of earth fill. This quantity of earth fill must come from the same source or an additional sample must be collected. The samples will be analyzed for the following parameters: VOCs (total compound list), SVOCs (total compound list), pesticides (total compound list), PCBs, Explosives, Nitro-glycerine, Nitro-guanadine, Nitrocellulose, TAL Metals, pH. The results will be screened by the contractor against a provided list of facility background levels. The earth fill must be approved by the OHARNG and, at a minimum, be at or below the facility-wide background values.

7. Natural Resources

7.1. Threatened and Endangered Species

The OHARNG has training areas and facilities throughout the State of Ohio. Both federally and state listed rare species have been identified at a few OHARNG locations and all OHARNG locations are within the known ranges of other listed species. The OHARNG is required to protect listed species. In addition, there are migratory birds that nest in vegetation and structures on OHARNG property. The Migratory Bird Treaty Act prohibits harm to nesting migratory birds, their eggs, and their nests (with the exception of a few introduced species). The Contractor is responsible for doing everything possible so as to not intentionally or unintentionally harm any listed or protected species at any OHARNG facility. Immediately prior to the action commencing, the contractor will perform a thorough inspection for nesting birds, inhabiting bats, or other animals within the project area (structure(s), construction site, etc.). This thorough search will be to determine if any bats, birds, or other animals are present within the work area (under roof flashing, under siding, nesting in brush, etc.). The Contractor will also remain alert for the presence of any animals during project implementation. This is particularly important for demolition because animals may be utilizing old/abandoned buildings or structures. If any animals are found, the contractor will stop work in that area and immediately notify the project manager and the OHARNG Environmental Office.

The OHARNG can impose project specific restrictions on activities due to regulatory requirements. Any such project specific restriction will be identified in the project scope of work and/or contract language and discussed with the contractor prior to bidding and commencement of work. The Contractor is required to comply with any such restrictions.

7.2. Mowing

There are no seasonal mowing restrictions on maintained lawns, grassland rights-of- way, and easements that are regularly mowed and maintained at a height of less than 10 inches. Grass and brush that is allowed to grow more than 10 inches tall during bird nesting season becomes suitable habitat for

grassland nesting birds and will not be mowed between 15 April and 15 August unless the Contractor has confirmed the absence of nests and nesting birds to the satisfaction of the OHARNG Environmental Office**.**

7.3. Vegetation Clearing and Tree Trimming

The Contractor must inform the OHARNG Environmental Office of their intended schedule a minimum of two weeks in advance of a vegetation clearing, tree cutting/felling, or tree trimming project. The OHARNG will determine if the proposed work dates are within the allowable window for the location and type of work being conducted. If work is proposed within the restricted time period, the Contractor will have to reschedule the work.

Tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24" above ground) and tree trimming of any branches and any other part of the tree that is at least three inches in diameter, can only occur between 1 October and 31 March. Abandoned wood utility poles are treated as trees in the sense that they can only be felled between 1 October and 31 March.

When clearing trees the contract specification will identify if the trees must be removed and hauled off site by the contractor or if they will remain on site to be salvaged by the government. The government will salvage trees when they are determined by the OHARNG Forester to have adequate commercial value as sawtimber or another forest product. When trees remain on site the Contractor will transport them and neatly stack them in a location designated by the OHARNG. If taken offsite, the Contractor will recycle the material as firewood, biomass, mulch, fuel chips, or some other reuse.

When trees are salvaged as sawtimber, all 8' 6" and longer straight portions of the trees up to a 10" diameter outside bark top that are felled will be limbed and neatly stacked in a location designated by the OHARNG. Limbing will consist of cutting limbs flush to the boll of the trees. Branch stubs are not permitted. Trees will be kept and stacked in as long of lengths as possible and under no circumstance less than 8'6" long. Pieces shorter than 8'6" are not suitable for sawtimber salvage. The Contractor will not cut otherwise longer tree sections to a length less than 8' 6" to avoid managing them a as sawtimber.

When trees are salvaged for firewood and/or biomass, all portions of the trees down to a 4" diameter top will be cut into 4.5' to 9' lengths and neatly stacked in an area designated by the OHARNG. Firewood salvage will include sawtimber sized trees that have poor form or are too short to be sawtimber and sawtimber topwood.

Limbs, branches, brush and tree parts not salvaged will be removed from the site and recycled. This material will be chipped prior to removal. If only a small amount of chips are generated and the work is not within a cantonment or other maintained area, the chips will be blown/scattered in adjacent unimproved areas/woodlands. Piles of chips are not permitted and chips will not be placed in wetlands. Brush can be ground or chipped in place as part of the clearing operation.

7.4. Stumps

Stumps will be ground or excavated in accordance with contract specification requirements. Stumps that are two feet tall or taller will not be ground or removed between 1 April and 30 September. Grinding of all stumps (to include major roots) will be to a minimum depth of 6 inches below ground surface. Grindings will be managed as directed by the project specifications. If in an upland area, chips can be spread on site adjacent to the stump. Grindings will not be spread in wetlands. If the area is not being leveled and re-graded, stump holes must be leveled and filled with clean fill dirt and top soil. Piles of grinding and chips will not be left on the project area or anywhere in a mowing zone.

The Contractor will not place chips or any parts of trees, brush, or any type of fill into any wetland including but not limited to ditches, streams, floodplain areas, wet spots or low areas. Stumps in wetlands will not be ground or excavated without a wetland permit and prior approval of the OHARNG Environmental Office.

If stumps are excavated, the contractor is required to remove and properly dispose of the stumps offsite or as otherwise specified within the project specifications. Surface disposal or burial on OHARNG property is not permitted.

7.5. Vegetation Establishment

The Contractor is responsible for ensuring the establishment of vegetative cover and soil stabilization of the project area and must use all means available and necessary to accomplish this. Straw erosion mats, rip rap, geo-cell, or other applicable soil stabilization methods, when needed, will be proposed to the OHARNG and approved before implementation. The contractor will utilize native vegetation. Vegetation to be used on a project will be identified in the Work Plan.

The Contractor is required to prepare an adequate seed bed prior to seeding. The seed bed must consist of clean, weed free top soil and must be broken up and loose and suitable for seed germination. Fertilization will be required if the soil is poor and/or nutrient levels are low. Lime will be applied as necessary to adjust the soil pH to the recommended level for the seed being sown.

An appropriate turf grass mix will be used for high traffic and high maintenance areas. Annual ryegrass can be added to mixes to provide quick cover. For late season seeding, winter wheat/rye can be added to provide a quick cover. Contractors will use approved grass seed mixes provided by the OHARNG. The OHARNG Environmental Office must approve all seed mixes. Seeding must be mulched with at least 2 inches of straw mulch if broadcast seeded, an appropriate fiber matting, or an appropriate cover if hydro-seeded. Seed drilling usually does not require mulch.

8. Cultural Resources

If during a project, the Contractor makes an inadvertent discovery of human remains, funerary items, animal remains, household artifacts or other artifacts, they will immediately stop work. All remains and artifacts will be left in place and measures taken to protect the site and artifacts from pilferage and damage will be implemented. The project manager, contracting office, and OHARNG Cultural Resources Manager will be notified immediately. In the event that human remains are identified, the on-site OHARNG security personnel or Range Control must be immediately contacted to allow them to contact the appropriate law enforcement agency.

9. Unanticipated Munitions Discovery

If unanticipated munitions, MEC, or MD are encountered at a work site, ground disturbing work will stop immediately, personnel will vacate the area, the area will be secured to keep personnel out, and the Contractor will immediately notify the USACE Project Manager and OHARNG Range Control. The OHARNG will investigate the discovery and coordinate with the appropriate UXO or Explosive Ordinance Division (EOD) support personnel. Contractor work in the area of the munitions will be suspended until the area is made/ declared safe by a qualified munitions/EOD technician. If the discovery of munitions results in the need to change the scope of work and/or contract terms, such changes will be determined by the Army team. Should the overall project require munitions investigation or removal or UXO construction support, details will be provided in the project-specific SOW or PWS.

10. Other

Keys shall be obtained and signed out from the OHANRG environmental office or CJAG logistics. Keys shall be returned after each field activity to the appropriate location. Keys shall not be copied or destroyed.

Positive drainage and grading shall be established and conducted by the Contractor in all disturbed project areas. This includes remediation areas, ruts, access/haul routes, laydown areas etc. Areas must be returned to conditions prior to disturbance. OHARNG/ARNG will approve final conditions.

QRG 2.2 FIRST RESPONDER (SPILL) REPORTING FORM

Collect as much of the information on the top half of this form as possible before making initial notification. Complete the top and bottom of the form before turning in to Range Operations.

Name of individual reporting spill: _____

When did the spill occur (Date and Time)? _____

Spill Location (Building or area name / number, indoors or out; if vehicle involved, type and bumper number):

_____

What was spilled? _____ **How much was spilled?** _____

Rate at which material is currently spilling. _____

Extent of spill travel? _____

Did the spill reach water (ditch, creek, stream, pond, well head)? _____

Number of injured personnel and type injuries, if applicable. _____

Do you need the Fire Department to respond to protect life, property, and environment? _____

Unit: _____ **State:** _____ **Report Date & Time:** _____

On Scene Coordinator Name and Grade: _____ **Phone:** _____

How did the spill occur (be specific)? _____

_____

What remedial action was taken? _____

_____

Was soil and absorbent material generated? _____ **How much?** _____

What is the location of the soil and absorbents? _____

Was the Environmental Office contacted (yes or No, date and time)? _____

Who did you talk to in the Environmental Office? _____

Was the site cleared by the Env. Office (Yes or No, date and time)? _____

Who cleared the site (name and grade, date and time)? _____

Initial information is critical. Get as much information as you can, but don't hesitate to make the initial notification if a spill is moving or worsening rapidly!

This form must be completed for all releases and turned-in to CJAG Range Operations within 24 hours.

FIRST RESPONDER SPILL/RELEASE RESPONSE ACTIONS

Units or contractors performing training or other operations at Camp James A. Garfield shall be responsible for adhering to the provisions identified in the Integrated Environmental Contingency Plans (IECP). A copy of the IECP may be obtained from the Camp James A. Garfield Environmental Supervisor. Following discovery of a spill (any size), the procedures outlined below shall be executed where applicable:

1. **If necessary, initiate evacuation of the immediate area.**
2. **Notify Camp James A. Garfield Range Operations via two-way radio or by calling (614) 336-6041, and report information contained on the "First Responder Reporting Form" if it is known or can reasonably be determined. This form has been copied on the opposite side of this page. If Range Operations cannot be reached, contact a Camp James A. Garfield OSC (listed below).**
3. **Stop spill flow when possible without undue risk of personal injury.**
4. **If trained, contain the spill using available spill response equipment or techniques.**
5. **Make spill scene OFF LIMITS to unauthorized personnel.**
6. **Restrict all sources of ignition when flammable substances are involved.**
7. **Report to the OSC upon his/her arrival to the scene. Turn in a completed copy of the Camp James A. Garfield First Responder Form to Range Operations for ALL releases, even ones cleaned up by the reporter.**

TELEPHONE NUMBER

When Camp James A. Garfield Range Operations is *not available*, the OSC *must be contacted* by the discoverer/first responder following a release if it is in water, at or above a reportable quantity (25 gallons or more of POL), a hazardous or extremely hazardous substance, a hazardous waste, or involves fire, explosion, or is otherwise a major incident.

NAME	JOB TITLE	OFFICE	24 HOUR
Camp James A Garfield Range Operations	Operations and Training	(614)336-6041	(614) 202-5783
Tim Morgan (Primary OSC)	Environmental Supervisor	(614)336-6568	(330)322-7098
Brad Kline (Alternate OSC)	Environmental Specialist	(614)336-4918	Contact Alternate
Katie Tait (Alternate OSC)	Environmental Specialist	(614)336-6136	Contact Alternate
Joint Forces Command (Alternate POC)	OHARNG Emergency Center	(888)637-9053	(888)637-9053

Off-site (from Camp James A. Garfield area code 614 phones)

Ravenna Dispatch 9-1-330 296-6486

SEE REVERSE FOR FIRST RESPONDER REPORTING FORM

CJAG WASTE MANAGEMENT GUIDELINES

PURPOSE: Guidelines to be followed by contractors working at Camp James A. Garfield Joint Military Training Center who are generating/shipping Hazardous, Non-Hazardous, Special or Universal Waste.

POLICY: The policy at CJAG is to comply with all local, state, federal and installation requirements. Contractor is responsible for waste minimization and is required to recycle materials if possible.

Restoration Program POC: Katie Tait (614) 336-6136 Military & Non-Restoration POC: Brad Kline (614) 336-4918

Coordination:

- Coordinate all waste generation and shipments with the appropriate CJAG POC listed above or the Environmental Supervisor in their absence at (614) 336-6568.
- Notify CJAG POC prior to waste sampling for characterization. Details about sampling activities must be included (i.e., number of sample, analyticals, etc.).
- All Hazardous and Non-Hazardous waste management storage locations must be pre-approved prior to generation.
- Ensure all labels include: Date, Contractor, and Waste Type.
- When contractors have waste onsite, a weekly Inspection inventory must be completed and submitted to the appropriate POC in the CJAG environmental office.
- All wastes shall be tracked and logged throughout the duration of the project. Contractor will provide CJAG POC with a monthly rollup report of all waste and recycled streams generated by no later than the 10th day of the following month.

Hazardous Waste Treatment, Storage and Disposal Facilities and Waste Haulers: Contractors are required to utilize hazardous waste haulers and Treatment, Storage, and Disposal Facilities on the latest Defense Reutilization Marketing Office (DRMO) approved list. The current qualified waste hauler and TSDF list can be viewed by following the "Qualified Facilities" and "Qualified Transporters" links found on the DLA Hazardous Waste Disposal Homepage, http://www.dispositionservices.dla.mil/newenv/hwdisposal.shtml.

Hazardous or Non-Hazardous manifest form, the following must be included:

- Military and non-restoration operations waste Site Name = Camp James A. Garfield Joint Military Training Center. Mailing and Site address: CJAG ENV, 1438 State Route 534 SW, Newton Falls, Ohio 44444, (614) 336-4918. Ohio EPA ID # – OHD981192925.
- Restoration Program waste Site Name = Former Ravenna Army Ammunition Plant. Mailing address is same as address above. Site address: 8451 State Route 5, Ravenna, Ohio 44266, (614) 336-6136. Ohio EPA ID # – OH5210020736.
- Contractor's shipping Hazardous Waste must provide a Land Disposal Restriction (LDR) in accordance with 40 CFR Part 268.
- Profiling:
  - The required shipping documentation (i.e. waste profile and executive summary of lab reports (if available)) need to be submitted to appropriate CJAG POC or designee(s) for approval and signature prior to shipping.
  - Results of characterization must be submitted to appropriate CJAG POC within 30 days after collecting sample.
- Manifests - Hazardous and Non-Hazardous:
  - The waste carrier/transporter provides appropriate manifest to the contractor.
  - The contractor is required to:
    - Ensure that CJAG POC or designee(s) is available to sign the manifest on the scheduled day of shipment;
    - Verify that each manifest is properly completed and signed by CJAG POC or designee(s);
    - Provide the Generator copy of the manifest to CJAG POC or designee(s); and
    - Ensure that the original Generator copy of the manifest signed by the treatment storage disposal facility is returned to CJAG within 30 days of the shipping date for Hazardous and Non-Hazardous Waste.
    - The use of a Bill of Lading, in lieu of a waste manifest, must be approved by the CJAG environmental office.

All satellite accumulation storage sites and containers will comply with 40CFR 262.34(c)(1):

- Any material that is subject to Hazardous Waste Manifest Requirements of the US Environmental Protection Agency must comply with 40 CFR Part 262.
- From the time any waste is placed in a satellite storage container, proper labeling must be on the container (proper labeling includes date, contractors name and product type).
- Pending analysis label is to be used from the time the sample is taken until the results are received.
- In no case will waste labeled pending analysis exceed 45 days.

All CJAG Hazardous and Non-Hazardous records are maintained at the CJAG environmental office, point of contacts are Katie Tait at (614) 336-6136 and Brad Kline at (614) 336-4918.

CJAG WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

Contractor: _____ **Month:** _____ **Year:** _____ **Waste Description:** _____

Container Nos. _____

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: **Time:**	**Date:** **Time:**	**Date:** **Time:**	**Date:** **Time:**
Point of Contact (Name / Number)				
Project Name:				
Contracting Agency and POC:				
Waste Determination: Pending Analysis, Hazardous, Non-Hazardous, etc.				
*Location on installation:				
Date Generated:				
Projected date of disposal:				
Non-Haz, Satellite, 90 day storage area				
Waste generation site:				
Number of Containers (size / type):				
Condition of Container:				
Containers closed, no loose lids, no loose bungs?	yes / no	yes / no	yes / no	yes / no
Waste labeled properly and visible (40 CFR 262.34 (c) (1):	yes / no	yes / no	yes / no	yes / no
Secondary containment	yes / no	yes / no	yes / no	yes / no
Incompatibles stored together?	yes / no	yes / no	yes / no	yes / no
Any spills?	yes / no	yes / no	yes / no	yes / no
Spill kit available?	yes / no	yes / no	yes / no	yes / no
Fire extinguisher present and charged?	yes / no	yes / no	yes / no	yes / no
Containers grounded if ignitables?	yes / no / na	yes / no / na	yes / no / na	yes / no / na
Emergency notification form/info present?	yes / no	yes / no	yes / no	yes / no
Container log binder present?	yes / no	yes / no	yes / no	yes / no
Signs posted if required?	yes / no	yes / no	yes / no	yes / no
Photos submitted	yes / no	yes / no	yes / no	yes / no
Printed Name:				
Signature:				

This form is required for Non-Hazardous and Hazardous waste including PCB and special waste.

CONTRACTORS ARE REQUIRED TO SUBMIT THIS FORM WEEKLY TO THE CAMP RAVENNA ENV OFFFICE WHEN WASTE IS STORED ON SITE.

CONTRACTORS ARE ENCOURAGED TO INCLUDE PHOTOS WITH EACH WEEKLY INSPECTION SHEET WHEN WASTE IS STORED ON SITE.

*Draw detailed map showing location of waste within the site.

-

Construction/Demolition Diversion and Waste Disposal Form/Tracker

Project Title _____ **Project Number** _____

Date	Material Type*	Material Description**	Total Quantity of Material	Tons/lbs/CY/each	Total Number of Manifest/Disposal Tickets Attached

***Material Type:** C&D Debris, Recyclable/Reutilized Material, Universal Waste, TSCA Regulated Waste

****Material Description:** C&D Debris (wood, glass, asphalt, concrete, soil, plastic etc…)
Recyclable Material (scrap metal and concrete etc….)
Universal Waste (bulbs, mercury containing devices, used batteries)
TSCA Waste (asbestos, PCB's, lead based paints)

APPENDIX E

TREE REMOVAL PLAN

This Tree Removal Plan was approved by the United States Army Corps of Engineers and the Ohio Army National Guard on February 28, 2023.

This document is submitted for reference only and is not intended for Ohio EPA review.

Attn: Mr. Nathaniel Peters II, Technical Manager
Army Corps of Engineers – Louisville District
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202

27 February 2023

Tree Removal Plan – Revision 1
CC RVAAP-70 East Classification Yard and RVAAP-50 Atlas Scrap Yard
Former Ravenna Army Ammunition Plant Restoration Program
Camp James A. Garfield, Portage and Trumbull Counties, Ohio

Dear Mr. Peters:

PIKA-Insight, JV, is submitting this letter to describe tree clearance activities in support of the removal action for CC RVAAP-70 East Classification Yard (ECY) and remedial action at RVAAP-50 Atlas Scrap Yard (ASY) including the Former Storage Area (FSA) and Former Incinerator Area (FIA) at Camp James A. Garfield (CJAG).

The recommended alternative in the *Action Memorandum for CC RVAAP-70 East Classification Yard* (Revision 1.0 June 2021) is excavation with offsite disposal of benzo(a)pyrene-contaminated soil to attain Unrestricted (Residential) Land Use. The recommended selected remedies from the *Revised Final Record of Decision for Soil, Sediment, and Surface Water at RVAAP-50 Atlas Scrap Yard* (June 2022) is thermal treatment of polyaromatic hydrocarbon-contaminated soil to attain Commercial/Industrial Land Use at the FSA and excavation and offsite disposal of lead-contaminated soil to attain Unrestricted (Residential) Land Use at the FIA.

During the pre-bid site visit both CC RVAAP-70 and RVAAP- 50 FSA and FIA were observed to be heavily overgrown with trees which will need to be removed to allow for safe and timely completion of the removal and remedial actions. Due to the Northern Long-Eared Bat (NLEB), tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24" above ground) and tree trimming of any branches and any other part of the tree that is at least three inches in diameter at breast height (dbh), can only occur between 1 October and 31 March, outside of the NLEB roosting season. PIKA-Insight JV is proposing these tree removal activities be performed during the months of February or March 2023 to facilitate the removal and remedial actions at the sites.

Delineation Sampling at the Former Incinerator Area

The RVAAP-50 ASY FIA excavation limits have not been completely delineated. To guide the effective and complete removal of lead-impacted soil at concentrations above the remedial action objective and, thereby know what trees must be cleared to facilitate the removal, field screening of soil using a Innov-X Systems Alpha Series™ X-ray fluorescence (XRF) analyzer or equivalent will be conducted.

This model unit does not require radioisotope operator certification nor does it pose a radiation hazard, as it operates using a low power (1.0 W) excitation source consisting of an X-Ray tube with a silver (Ag) anode target.

Soil may be field screened non-intrusively by placing the XRF directly on the soil surface after removing debris from the soil surface. Alternatively, the portion of soil selected for field screening may be prepared by placing approximately 8 ounces of soil into a disposable zip locking plastic bag. Large pieces of soil within the plastic bag will be broken into smaller pieces, and the soil will be blended to form as homogeneous a mixture as is practical. The bagged samples will be placed on a lead-free plastic worktable prior to XRF screening. Each sample will be screened by placing the XRF analyzer onto the sample for 30 seconds to obtain comparable results among the samples.

The XRF analyzer will be calibrated daily, and calibration results will be recorded in the field logbook or on equipment calibration logs. XRF analyzer results for lead will be recorded in the field logbook or on field data sheets in instrument units that are equivalent to parts per million (roughly equivalent to mg/kg). Field screening will be performed by taking one XRF reading per grid cell shown on **FIGURE 1**. If field screening indicates lead concentrations at or above 400 mg/kg, additional field screening will be performed in adjacent cells located further from the presumed source (the former incinerator). The delineation will be terminated when results of the field screening generate a perimeter beyond which the XRF lead readings are lower than the RAOs.

The results of the XRF field screening will be used to determine the approximate boundaries of the tree removal. These boundaries will be communicated to the OHARNG prior to mobilization for tree removal.

Tree Removal

The scopes of work at CC RVAAP-70 and RVAAP-50 FSA and FIA include excavation of soil. Completion of these activities will require maneuvering heavy equipment and trucks into these areas. The limits of the proposed tree removal activities include the removal areas, a 10-foot buffer around the removal areas, and additional vegetation required to access the removal areas as shown on **FIGURES 2 THROUGH 4**. These limits will be marked in the field prior to the commencement of tree removal activities.

It is assumed that only trees and brush in the marked areas on **FIGURES 2 THROUGH 4** and those posing access issues along the access routes will be targeted during this activity. Additionally, trees planned for removal to facilitate the work will be marked with stakes, and Ohio Army National Guard (OHARNG) will inspect the trees prior to removal in order to inventory them.

Trees are anticipated to be removed mechanically using a feller-buncher. Deviations from this method will be communicated to and approved by the United States Army Corps of Engineers (USACE) and OHARNG prior to application. Tree removal will be performed in accordance with *OHARNG Environmental Procedures Restoration Program Specific Version* date 15 July 2022. The procedures contained therein are summarized in the following paragraphs.

Should the government request to salvage trees, such trees will be transported and neatly stacked in a location designated by the OHARNG.

Limbs, branches, brush and tree parts not salvaged will be chipped, removed from the site, and recycled. If only a small amount of chips are generated and the work is not within a cantonment or other maintained area, the chips will be blown/scattered in adjacent unimproved areas/woodlands. Piles of chips will not be generated, and chips will not be placed in wetlands. Brush will be ground or chipped in place as part of the clearing operation.

When clearing trees, trees will be stockpiled as firewood. Trees that are salvaged for firewood and all portions of the trees down to a 4" diameter top will be cut into 4.5' to 9' lengths and neatly stacked adjacent to the nearest established road that is within the AOC in coordination with the OHARNG. Firewood salvage will include sawtimber sized trees that have poor form or are too short to be sawtimber and sawtimber topwood.

Stumps (including major roots) that would interfere with remedial/removal action activities and are not in contact with contaminated soil will be ground to a minimum depth of 6 inches below ground surface in the areas where the soil is not contaminated. Chips will be spread on site adjacent to the stump but not into wetlands. Stumps in wetlands will not be ground-down or excavated without approval from OHARNG.

As indicated on the attached figures, certain areas within each of the RVAAPs are considered contaminated. These areas will be staked prior to tree removal activities. Trees and brush that come into contact with contaminated soil will be considered contaminated. Root balls and stumps in contaminated areas are considered contaminated by default. Contaminated material must be taken to an approved landfill per CJAG requirements. However, disposal of contaminated material at a landfill is outside of scope of this work plan and will be handled in accordance with the Removal Action Work Plans that are being developed.

Trees removed within contaminated areas that do not come into contact with contaminated soil will not be considered contaminated and will be relocated outside of the contaminated area to be handled with other uncontaminated material. The following best management practices will be followed to reduce the mass of contaminated material: (1) uncontaminated trees will not be felled onto contaminated material, (2) chipped, uncontaminated material will not be broadcasted onto contaminated material, and (3) trees in contaminated areas will be felled in such a manner that they can be relocated outside of the contaminated area prior to contacting the ground.

Stumps/root balls in the contaminated areas will be left in place and ground/removed as needed during excavation activities.

Equipment Maintenance

Daily equipment checklists will be completed for heavy equipment and vehicles. Preventive maintenance will be performed on equipment to make sure proper operation and to detect potential leaks before they occur and manufacturer's maintenance schedules are followed for all equipment. Good housekeeping practices will be maintained during construction activities. Employees will practice due diligence to prevent any damage to the stormwater control measures. Containers will be provided at the necessary locations for collecting trash and general construction debris. Fueling activities will be conducted at the staging area away from stormwater conveyances. Equipment refueling operations will be performed via a truck with a fuel cell in the truck bed. The refueling truck will remain outside of the excavation area so as to not track out contaminated material. Drip trays will be utilized during equipment refueling operations. Operators will not leave equipment refueling operations unattended and spill kits will be staged near refueling areas. Spill response will be performed in accordance with the facility Environmental Procedures.

Decontamination

Upon completion of the tree removal activities, decontamination of tools and equipment will be performed at each area of concern. Tree removal equipment will be decontaminated prior to being used in other

excavation areas/AOCs (e.g., equipment used in lead-impacted soil will be decontaminated prior to use in benzo(a)pyrene-impacted soil). Equipment, including parts of equipment that come in contact with contaminated soil (tracks wheels, undercarriage of equipment, etc.), will be decontaminated. Tree removal equipment will be thoroughly decontaminated prior to demobilization from the site and CJAG.

Decontamination methods to be implemented may range from dry decontamination procedures, which include removal of all loose soil from buckets, tracks, and undercarriages to a wet brush washing and/or steam cleaning, depending on the extent of residual soils on the equipment. Residual soil removed from equipment will be left onsite. Temporary decontamination pads consisting of visqueen-lined berms capable of collecting wash water, including overspray, and loose soil will be constructed, as needed, to avoid cross-contamination of clean areas during decontamination procedures. At the conclusion of the decontamination operations, the decontamination pad will be dismantled and placed, along with any fluids or collected soil, into secure containers for proper disposal. Contaminated waste will be segregated by media type and transported to Building 1036 for storage pending characterization. Characterization sampling will be performed immediately after the containers are filled and/or the tree removal is complete. Characterization samples will be submitted to ALS – Middletown for analysis in accordance with disposal facility requirements. Other solid waste with minimal soil residue and contamination will be disposed of in a municipal dumpster.

Environmental Protection Plan

Due to the Northern Long-Eared Bat, tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24" above ground) and tree trimming of any branches and any other part of the tree that is at least three inches in diameter, will only occur between 1 October and 31 March, outside of the NLEB roosting season. Stumps that are two feet tall or taller will only be ground or removed between 1 October and 31 March in the areas where the soil is not contaminated. As such, the planned field work will occur prior to 31 March 2023.

Removal/remedial action activities at the sites will require removal and disposal of soil. To minimize ground disturbance, PIKA-Insight JV will limit activities that disturb the ground surface such as clearing, truck loading, and equipment movement to the areas shown on **FIGURES 2 THROUGH 4**. Best management practices will include erosion and sediment controls such as hay bales, filter sock, and silt fence. These will be installed in coordination with OHARNG as necessary to prevent soil erosion and runoff as described in the removal/remedial actions respective work plans that are being developed and will be maintained until the Site work is complete.

Water will not be drawn from nor pumped into adjacent water bodies or wetlands.

Wetlands have not been delineated at the sites since 2017. Identified wetlands will be marked prior to tree removal activities. Should crossing or entering wetlands be required to facilitate tree removal hand-cutting will be employed, if feasible, to reduce the impact on the wetlands. To maximize efficiency and complete tree and brush removal and also minimize impacts to wetland areas, tracked vehicles will be used for tree removal and erosion and sediment controls (e.g., track mats) will be implemented as needed to traverse and work in wetland areas.

Streams will not be traversed except by existing infrastructure (e.g., culverts). Streams will be protected through the installation of erosion and sediment controls where an access road approaches the stream and

where the stream is downgradient of and likely to be impacted by work at the site. The only identified stream that may require protection (pending delineation sampling) is north of the FIA. Erosion and sediment controls may be required to be installed along the southern bank of the stream. Revised locations for erosion and sediment controls will be provided to OHARNG for approval following delineation sampling.

Please contact me by telephone at (619) 843-9968 or by email at mMendoza@ieeci.com if you have any questions.

Sincerely,

Marco Mendoza, PG
Project Manager

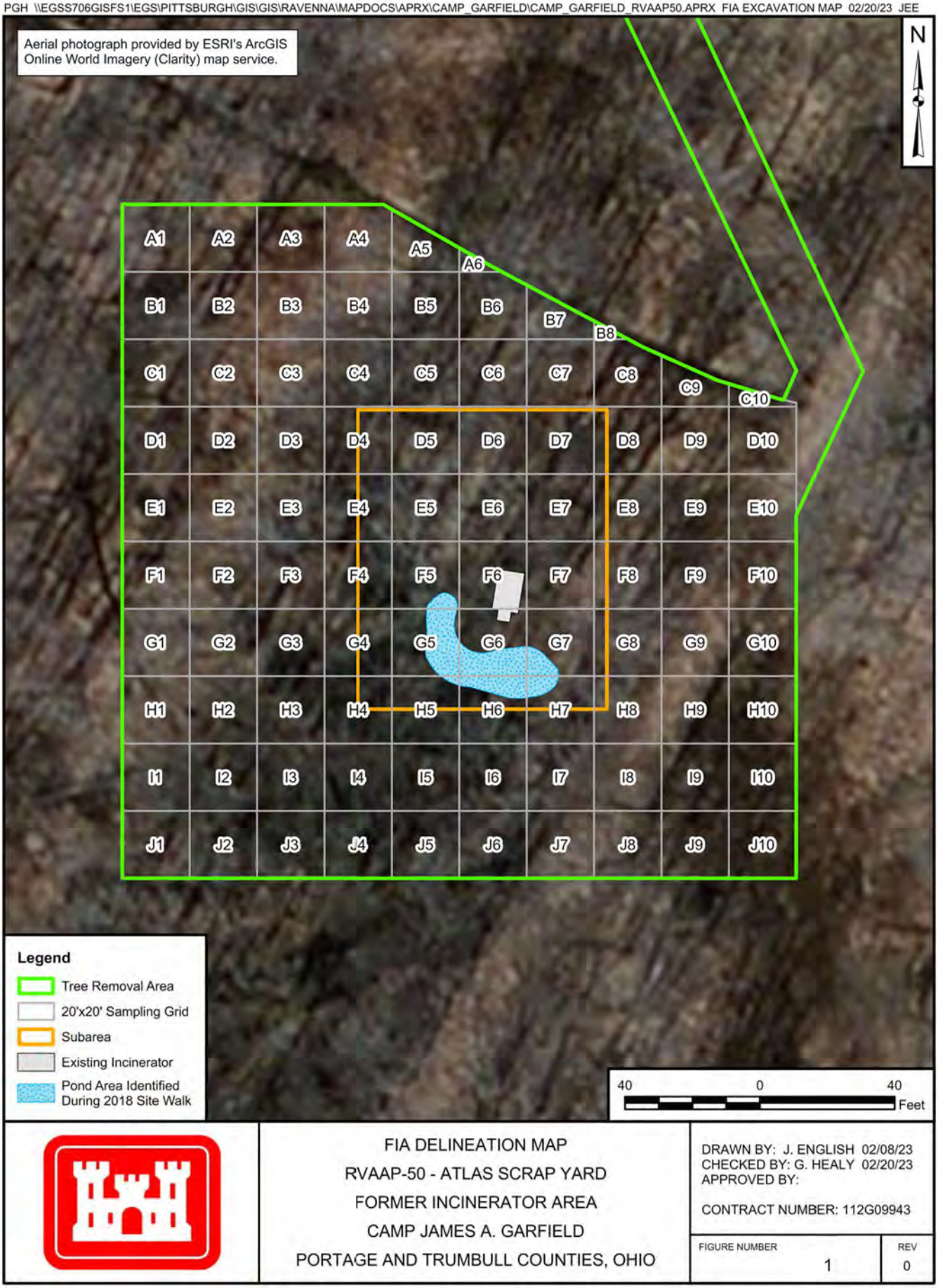
CC: Steve Kvaal, USACE-Louisville District (Electronic)
Kevin Sedlak, ARNG Restoration Project Manager (Electronic)
Katie Tait, OHARNG Environmental Specialist II (Electronic)
Jennifer Tierney, Administrative Records Manager (Electronic)
Robert Davis, Tetra Tech (Electronic)
Greg Healy, Tetra Tech (Electronic)

Attachments:

Figure 1	RVAAP-50 FIA Delineation Sampling Map
Figure 2	CC RVAAP-70 Tree Removal Map
Figure 3	RVAAP-50 FIA Tree Removal Map
Figure 4	RVAAP-50 FSA Tree Removal Map

ATTACHMENTS

PGH \\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FIA EXCAVATION MAP 02/20/23 JEE



FIA DELINEATION MAP
RVAAP-50 - ATLAS SCRAP YARD
FORMER INCINERATOR AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

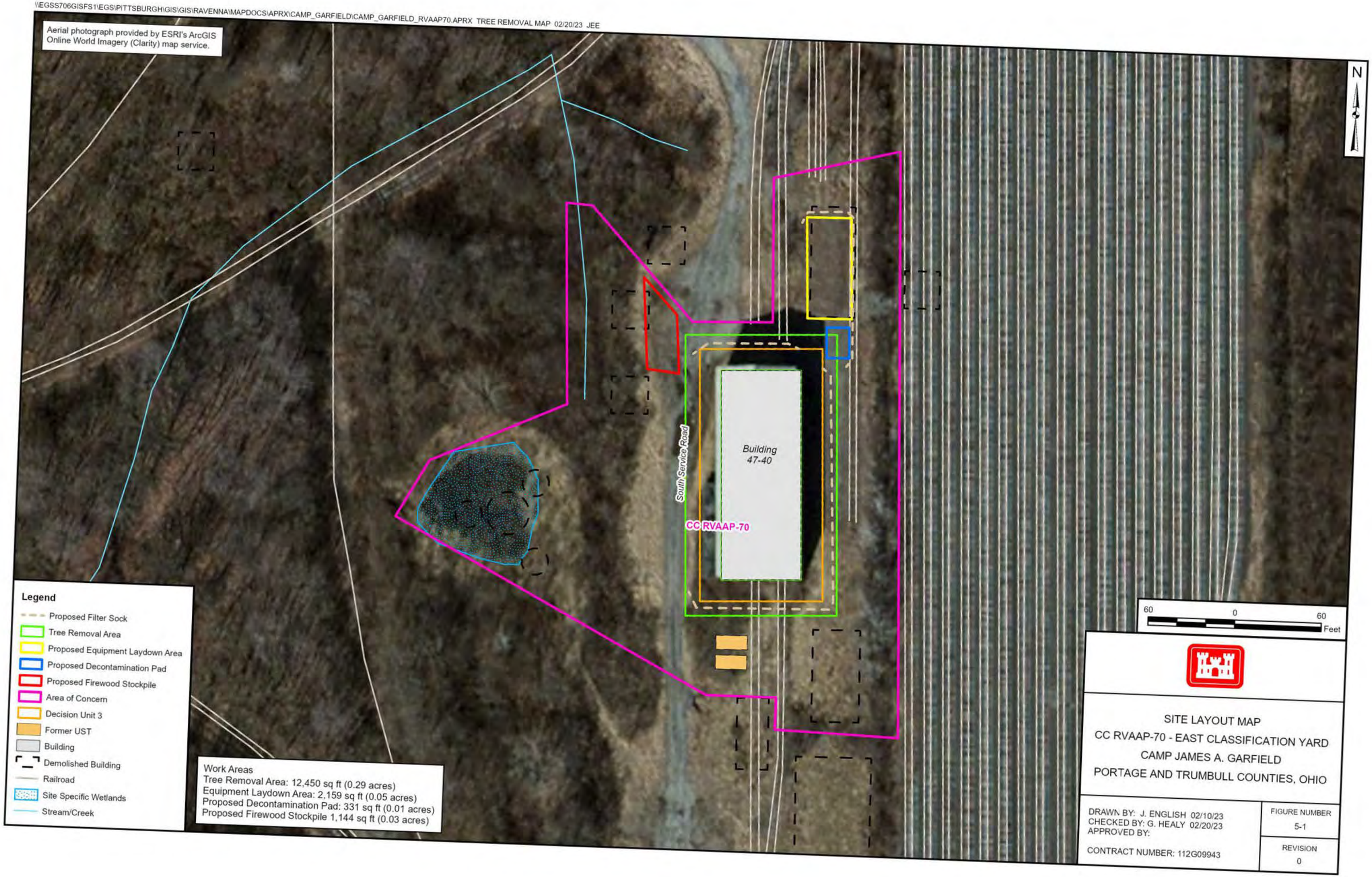
DRAWN BY: J. ENGLISH 02/08/23
CHECKED BY: G. HEALY 02/20/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER	REV
1	0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP70.APRX TREE REMOVAL MAP 02/20/23 JEE

Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



SITE LAYOUT MAP
CC RVAAP-70 - EAST CLASSIFICATION YARD
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

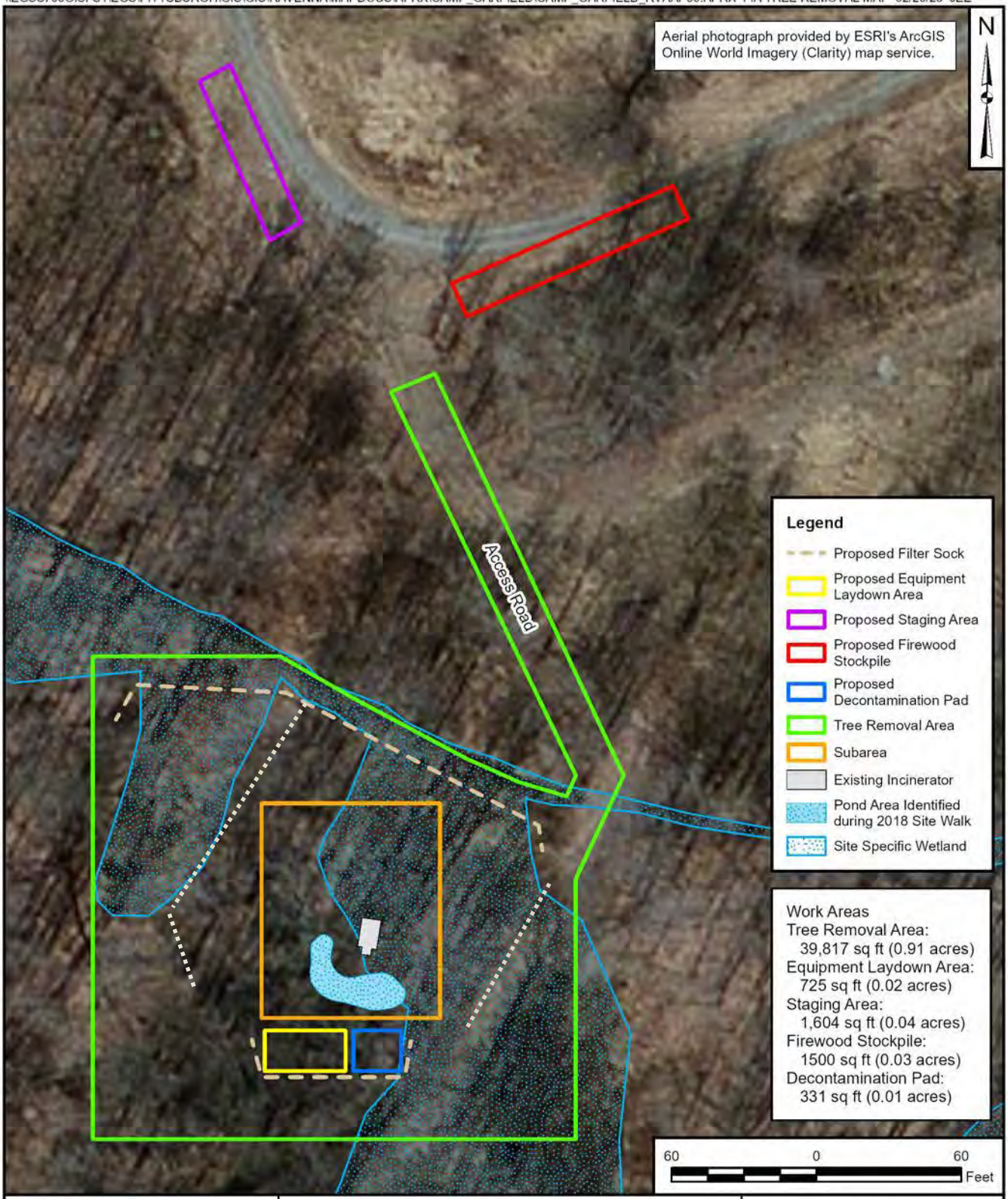
DRAWN BY: J. ENGLISH 02/10/23
CHECKED BY: G. HEALY 02/20/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER
5-1

REVISION
0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FIA TREE REMOVAL MAP 02/20/23 JEE



FIA SITE LAYOUT MAP
RVAAP-50 - ATLAS SCRAP YARD
FORMER INCINERATOR AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

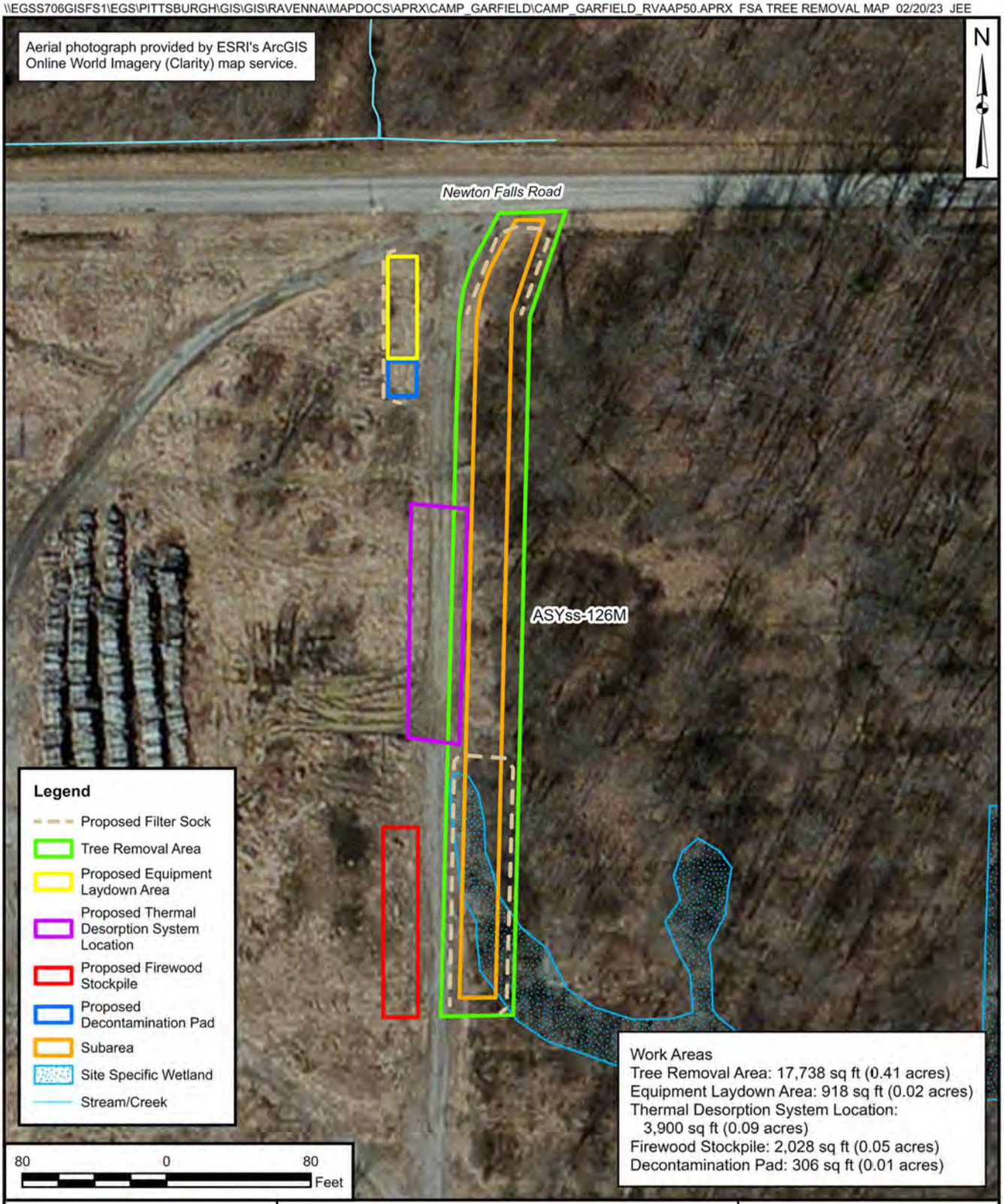
DRAWN BY: J. ENGLISH 02/10/23
CHECKED BY: G. HEALY 02/20/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER 3

REV 0

\\EGSS706GISFS1\EGS\PITTSBURGH\GIS\GIS\RAVENNA\MAPDOCS\APRX\CAMP_GARFIELD\CAMP_GARFIELD_RVAAP50.APRX FSA TREE REMOVAL MAP 02/20/23 JEE



TETRA TECH

SITE LAYOUT MAP
RVAAP-50 - ATLAS SCRAP YARD
FORMER STORAGE AREA
CAMP JAMES A. GARFIELD
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 02/06/23
CHECKED BY: G. HEALY 02/20/23
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER 4

REV 0

APPENDIX F

OHIO EPA COMMENT LETTERS

Received March 5, 2024

March 4, 2024

TRANSMITTED ELECTRONICALLY

Mr. Kevin Sedlak
Restoration Program Manager
ARNG-ILE Clean Up
Camp James A Garfield JTC
1438 State Route 534 SW
Newton Falls, OH 44444

RE: US Army Ammunition Plt RVAAP
Remediation Response
Project Records
Remedial Response
Portage County
ID#267000859110

Sent via email to: Kevin.m.sedlak.ctr@army.mil

Subject: Ohio EPA Comments of the "Draft Remedial Design for RVAAP-50 Atlas Scrap Yard" dated December 8, 2024

Dear Mr. Sedlak:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the Ravenna Army Ammunition Plan Restoration Program (RVAAP) "Draft Remedial Design for RVAAP-50" for Remedial Action at RVAAP-50 Atlas Scrap at the Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio (Camp Garfield).[1] This document was received via email at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) on December 8, 2023. The report was prepared for the United States Army Corps of Engineers on behalf of the National Guard Bureau Prepared by PIKA-Insight JV, LLC under Contract Number W912QR-23-F-0015. Comments on the document based on Ohio EPA review are provided below. Please provide responses to the enclosed comments in accordance with the Directors Findings and Orders.

GENERAL COMMENTS

Comment 1: Target blood lead levels and lead exposure to receptors have been recently updated by U.S. EPA (Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities (epa.gov), January 2024). U.S. EPA lowered the target blood lead level to 5 µg/dL of blood. Please provide an explanation as to how you plan to address this update and how the area of concern (AOC) post remedy will be protective of identified receptors. Note that the current U.S. EPA directive is specific to residential exposures. However, changes to the commercial receptor's soil lead screening

[1] http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2664152

and remedial levels will likely also be lowered based on the new target blood lead levels.

Comment 2: This package would be improved with a cross-section drawing of the treatment pile showing the various layers and piping. Figure 5-5 shows a schematic of the treatment train, but a detailed drawing of the pile would be helpful too.

Comment 3: Section 5.5 describe activities associated with the construction, operation, performance sampling, and waste management for the Enhanced Soil Vapor Thermal Treatment (ESVT) system at the Former Storage Area (FSA). Please provide additional information on what material will be used for insulating the treatment pile, and what material will be used for waterproofing the pile.

Comment 4: The wetlands mitigation and restoration plan is stated to be provided in APPENDIX F and that it will be conducted by a separate contractor. This separate contractor will be involved in the restoration of the sites at the end of the remediation to make sure the sites are restored to the same grade and elevation and to seeding of the wetlands area. Appendix F states: "APPENDIX F, PLACEHOLDER FOR WETLAND MITIGATION AND RESTORATION PLAN, Provided as requested by Ohio Environmental Protection Agency and United States Army Corps of Engineers. The Wetland Mitigation and Restoration plan should be treated as a separate document and not delay this Remedial Design."

Both areas to be remediated (Former Incinerator Area (FIA) and FSA) identified wetlands and the FIA include a pond, that will/may be disturbed during remedial action. The wetland mitigation plan (APPENDIX F) shall be provided for review and approval of the remedial design. This wetland mitigation plan and any required permits are to be identified and approved before work at the AOC begins that may affect any wetlands.

RISK COMMENTS

Comment 5: Section 4.1 Objectives states in part: "(t)he RAO for Atlas Scrap Yard is to prevent exposure to 1) surface soil (0 to 1 foot below ground surface (bgs)) with concentrations of lead above 400 milligrams per kilogram (mg/kg) at the FIA; and 2) surface soil (0 to 1 foot bgs) with concentrations of PAHs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenzo(a,h)anthracene above cleanup goals (CUGs) in the FSA. The RAO references CUGs and risk levels that are considered protective of human health under current and future use scenarios."

Previous sampling for the remedial investigation suggests that soil contamination is likely located in the 0 to 1-foot below ground surface (bgs) for both the FIA and FSA. However, it should be noted that soils are to meet CUGs to depth and are not limited to 0 to 1-foot bgs. If confirmation sampling identifies contamination deeper in the soils, then soil will be removed until the CUGs are met regardless of depth. Revise the text for clarity and that no depth based points of compliance will be used in the remedial action for limiting the soil removal or action depth.

Comment 6: Section 5.1.5 Former Incineration Area Delineation discusses methods for delineating horizontal extent. Figure 5-1 FIA Delineation Map identifies a pond in the central/southern area of the FIA.

No information on sediment sampling was provided in the draft remedial design. Provide the sampling approach including locations and number of samples to delineate potential contamination including depth of contamination in sediment in the revised remedial design.

This "Draft Remedial Design for RVAAP-50 Atlas Scrap Yard" was reviewed by personnel from Ohio EPA. Additional information is necessary to approve the document. If you have questions or would like to set up a meeting to discuss these comments, you can contact me at craig.kowalski@epa.ohio.gov.

Sincerely,

Craig Kowalski

Craig Kowalski
Environmental Specialist
Division of Environmental Response and Revitalization

CK/cm

ec: Katie Tait, OHARNG RTLS, CJAG
Steve Kvaal, USACE Louisville
Nathaniel Peters, USACE Louisville
Angela Cobbs, Chenega
Jennifer M. Tierney, Chenega,
Megan Oravec, Ohio EPA, NEDO DERR
Natalie Oryshkewych, Ohio EPA, NEDO DERR
Liam McEvoy, Ohio EPA, NEDO DERR
Joe Loucek, Ohio EPA, NEDO DSW
Brian Tucker, Ohio EPA, CO DERR
Thomas Schneider, Ohio EPA, SWDO DERR

Received August 30, 2024

August 30, 2024

TRANSMITTED ELECTRONICALLY

Mr. Kevin Sedlak
Restoration Program Manager
ARNG-ILE Clean Up
Camp James A Garfield JTC
1438 State Route 534 SW
Newton Falls, OH 44444

Sent via email to:
Kevin.m.sedlak.ctr@army.mil

RE: US Army Ravenna Ammunition Plt
RVAAP
Remediation Response
Project Records
Remedial Design
Remedial Response
Portage County
ID # 267000859110

Subject: **Former Ravenna Army Ammunition Plant**
Responses to Ohio EPA Comments on the Draft Remedial Design for RVAAP-50 Atlas Scrap Yard
Ohio EPA Request for Final with Comment

Dear Mr. Sedlak:

The Ohio Environmental Protection Agency (Ohio EPA), Northeast District Office (NEDO), has received and reviewed the Ravenna Army Ammunition Plant (RVAAP) Restoration Program, Portage/Trumbull Counties, Ohio, Responses to Ohio EPA Comments on the Draft Remedial Design for RVAAP-50 Atlas Scrap Yard dated April 16, 2024[1]. This document was received at Ohio EPA's Northeast District Office (NEDO), by the Division of Environmental Response and Revitalization (DERR) via email on April 16, 2024. The Draft Remedial Design was received by Ohio EPA on December 8, 2023[2] and Ohio EPA sent comments on March 2, 2024[3]. The Draft Remedial Design document was prepared for United States Army Corps of Engineers (USACE) on behalf of the National Guard Bureau by PIKA-Insight.

[1] http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2805853
[2] http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2664152
[3] http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2761808

Ohio EPA Comments

Ohio EPA is requesting a copy of the wetland mitigation plan as a separate document. Ohio EPA understands USACE initiated a modification for the contract. Ohio EPA will approve the Remedial Design report on the contingency that the wetland mitigation plan is agreed upon and completed.

Follow up to Comment 5 in the March 2, 2024 Ohio EPA Comment Letter: Ohio EPA should be included in the approval organizations/hierarchy (e.g., OHARNG, PM) to determine if additional soil excavation is needed based on confirmation sampling soil concentrations exceeding the cleanup goals (CUGs).

Based on our review of the Army National Guard's Response to Ohio EPA comments provided in your letter dated April 16, 2024, we find the responses generally acceptable, and the document can be finalized with the two comments above incorporated. Please be sure that all agreed-upon changes, additions, and clarifications are provided in the final document.

If you have any questions, please contact me at (330) 963-1109, or via email at craig.kowalski@epa.ohio.gov.

Sincerely,

Craig Kowalski

Craig Kowalski
Site Coordinator
Division of Environmental Response and Revitalization

CK/cm

ec: Katie Tait, OHARNG RTLS, CJAG
Steve Kvaal, USACE Louisville
Nathaniel Peters, USACE Louisville
Angela Cobbs, Chenega Reliable Services
Jennifer Tierney, Chenega Reliable Services
Megan Oravec, Ohio EPA, NEDO DERR
Natalie Oryshkewych, Ohio EPA, NEDO DERR
Thomas Schneider, Ohio EPA, SWDO DERR
Tim Christman, Ohio EPA, CO DERR
Brian Tucker, Ohio EPA, CO DERR