Final
Site Inspection Report:
CC RVAAP-80 Group 2 Propellant Can Tops
Former Ravenna Army Ammunition Plant
Portage and Trumbull Counties, Ohio

May 10, 2017

Project No. 118064-RVAAP-80

Prepared for:
National Guard Bureau
Army National Guard
(ARNG-IED Cleanup)
111 South George Mason Drive
Arlington, Virginia 22204-1373

Finalized and Updated by:
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Louisville District
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None.

14. ABSTRACT

A Site Inspection (SI) was conducted at the Compliance Restoration (CR) Site CC (Army Environmental Compliance-Related A Cleanup Program) RV AAP-80 at the former Ravenna Army Ammunition Plant (RV AAP). Soils were evaluated to determine if propellants or other munitions constituents were present at locations where discarded munitions packaging material (propellant cans and tops) were identified in 2011 by visual and geophysical surveys. In addition, samples were assessed to identify whether concentrations of propellants and/or other munitions constituents if present, were great enough to be considered contamination. Both surface and subsurface soils were evaluated in the SI. Based on the evaluation of data collected from both the 2011 SI and this SI, no contamination was identified in soils. Additionally, the soils are not a source to receptors or to a groundwater pathway. No other media (e.g., sediment or surface water) are present at the Site. Since no contamination was identified at the AOC, a No Further Action decision was made for this Site and no additional remedial action is warranted.

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Ohio Environmental Protection Agency

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

May 30, 2017

Mr. Mark Leeper
Army National Guard Directorate
ARNGD-ILE Clean Up
111 South George Mason Drive
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Re: US Army Ammunition Plt RVAAP
Remediation Response
Project Records
Remedial Response
Portage County
267000859160

Subject: **Ravenna Army Ammunition Plant, Portage/Trumbull Counties. Approval of the "Final Site Inspection Report: CC RVAAP-80 Group 2 Propellant Can Tops" at the Former Ravenna Army Ammunition Plant, Ravenna, Ohio, Dated May 10, 2017, Ohio EPA ID # 267-000859-160**

Dear Mr. Leeper:

The Ohio Environmental Protection Agency (Ohio EPA) has received the "Final Site Inspection Report: CC RVAAP-80 Group 2 Propellant Can Tops" at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. The document was received at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) on May 11, 2017. The report was prepared for the US Army National Guard Bureau originally by PIKA International, Inc. under Contract Number W912QR-12-F-0212, but was finalized by the U.S. Army Corps of Engineers, Louisville District.

This document was reviewed by personnel from Ohio EPA's DERR to assure that the response to Ohio EPA comments, as agreed to in correspondence dated March 28 and April 10, 2017, were satisfied. Pursuant to the Director's Findings and Orders paragraph 39 (b), the Final document is approved.

If you have any questions, please call me at (330) 963-1292.

Sincerely,

Kevin M. Palombo
Environmental Specialist
Division of Environmental Response and Revitalization

KP/nvr

cc: Rebecca Shreffler/Gail Harris, VISTA Sciences Corp.

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31 MAY 2017 -

Disclaimer Statement

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Final Site Inspection Report
CC RVAAP-80 Propellant Can Tops

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Kevin Palumbo	Ohio Environmental Protection Agency Northeast District Office Division of Environmental Response and Revitalization	1	3
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Gail Harris	VISTA – RVAAP Administrative Records Manager	2	1
Jay Trumble	USACE – United States Army Corps of Engineers – Louisville District - Project Manager	2	2

STATEMENT OF INDEPENDENT TECHNICAL REVIEW

The United States Army Corps of Engineers, Louisville District has completed the *Final Site Inspection Report: CC RVAAP-80 Group 2 Propellant Can Tops,* at the Ravenna Army Ammunition Plant, Ravenna, Ohio. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy, principles, and procedures, utilizing justified and valid assumptions, was verified. This included review of data quality objectives; technical assumptions; methods, procedures and materials to be used; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets customer's needs consistent with law and existing Corps policy.

Reviewed/Approved by: Nathaniel Peters, II Date: 5/3/2017

Nathaniel Peters, II
SME Engineering, PE

Prepared/Approved by: Angela L. Schmidt Date: 5/3/2017

Angela L. Schmidt
SME Risk Assessor
Environmental Biologist

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LIST OF ACRONYMS

ADR	Automated Data Review
AOC	Area of Concern
APP	Accident Prevention Plan
bgs	below ground surface
Camp Ravenna	Camp Ravenna Joint Military Training Center
CC	Army Environmental Compliance-Related Cleanup Program
CR	Compliance Restoration
COC	Chemical of Concern
COPCs	Chemicals of Potential Concern
DoD	Department of Defense
DoDI	Department of Defense Instructions
ELAP	Environmental Laboratory Accreditation Program
EPC	Exposure Point Concentration
EZ	Exclusion Zone
FWCUGs	Facility-Wide Clean Up Goals
HAZWOPER	Hazardous Waste Operations and Emergency Response
HQ	Hazard Quotient
HTRW	Hazards, Toxic, and Radioactive Waste
IDW	Inspection Derived Waste
IRP	Installation Restoration Program
ISM	Incremental Sampling Methodology
LL	Load Line
MC	Munitions Constituents
MD	Munitions Debris
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
MEC	Munitions and Explosives of Concern
mm	millimeter
MPPEH	Material Potentially Presenting an Explosive Hazard
MSD	Minimum Separation Distance
NFA	No Further Action
OHARNG	Ohio Army National Guard
OSHA	Occupational Safety and Health Administration
PCBs	Poly Chlorinated Biphenyls
PIKA	PIKA International, Inc
QAPP	Quality Assurance Project Plan
QSM	Quality System Manual
RSLs	Residential Screening Levels
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SI	Site Inspection
SSHP	Site Safety and Health Plan

SUXOS	Senior UXO Supervisor
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USP&FO	United States Property and Fiscal Officer
UXO	Unexploded Ordnance
UXOT II	UXO Technician II
UXOQCS	UXO Safety/Quality Control Specialist
UXOSO	UXO Safety Officer
UXOT III	UXO Technician III
VOCs	Volatile Organic Compounds
WOE	Weight of Evidence

EXECUTIVE SUMMARY

This Site Inspection (SI) report describes the activities performed to complete an evaluation of potential soil contamination at the Compliance Restoration (CR) Army Environmental Compliance-Related Cleanup Program CC RVAAP-80 Group 2 Propellant Can Tops Area of Concern (AOC) at the former Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. All work was conducted in accordance with the *Revised* Final Project Work Plan for Site Inspections at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops, Revision 1 (PIKA, 2016). Work was originally authorized under contract W912QR-12-F-0212 issued to PIKA International, Inc. (PIKA) by U.S. Army Corps of Engineers, Louisville District (USACE). Due to delays in the cleanup program at the former RVAAP that were unrelated to PIKA's performance, PIKA could not complete this document before the Contract ended and the document was left as a Draft in December 2016. Therefore, USACE has revised and finalized this SI.

The *former* Ravenna Army Ammunition Plant (RVAAP), consisting of 21,683 acres, is in northeastern Ohio within Portage and Trumbull counties (Figure 1). The CC RVAAP-80 consists of the Group 2 Propellant Can Tops Site and is located within the boundaries of the former facility (Figure 2). The RVAAP was used as a load, assemble, and packing facility for munitions production.

This SI was conducted to evaluate if soils at the AOC have propellants or other munitions constituents (MC) present at concentrations great enough to be defined as contamination. The evaluation was completed specifically at locations where discarded munitions packaging material (propellant cans and tops) were identified by visual and geophysical surveys. The sample data were assessed to evaluate the presence or absence of contamination, and whether there had been a release at the AOC. Contamination is identified if the detected concentrations of propellants and/or MC constituents were greater than the Facility Wide Cleanup Goals (FWCUGs) established for the Resident Receptor at RVAAP in surface or subsurface soils. Data for this SI included: the collection of all propellant cans, can tops, and related debris at or near the surface (based upon the anomalies identified during the 2011 Geophysical Survey that was conducted as part of the 2011 SI). In addition, all collected debris was inspected, certified, and disposed in accordance with Department of Defense Instructions (DoDI) 4140.62.

The 2011 Geophysical Survey of the AOC covered 12.4 acres and included the collection of three surficial incremental soil samples. Geophysical data showed that tops and cans were not buried in the subsurface at the site (PIKA, 2012). Eight clusters of debris identified during the 2011 SI as having potential contamination were selected as sample locations for this SI. Soil samples were collected using the incremental sampling methodology (ISM).

Most of the pin flags placed during the 2011 SI Geophysical Survey were still in place and visible during this SI. A four-man team of unexploded ordnance (UXO) Technicians reacquired the anomalies previously identified during the 2011 Geophysical Survey. The Team also inspected a 1-meter radius around each pin flag to depth, removing all magnetic anomalies including propellant cans, can tops, and occasional unrelated items such as railroad spikes, banding, and strapping materials.

The UXO Team inspected each individual item encountered to certify them as material documented as safe (MDAS). All items recovered during this effort were certified MDAS and transported to the local recycling facility. No munition-related items were encountered and none of the propellant cans, can tops, or non-packing items were identified as Material Documented with an Explosive Hazard (MDEH). More than 530 propellant cans, can tops, and related packaging debris were collected. Additionally, miscellaneous metal scrap (e.g., rail road spikes, t-posts, wrenches, conduit, nuts bolts and nails) weighing 1,760 pounds was recovered and properly disposed.

The ISM soil samples were analyzed for the target analyte list (TAL) metals and perchlorate and three common propellants that were used by the DoD (nitrocellulose, nitroglycerine, and nitroguanidine). One sample was analyzed also for the RVAAP full suite, (explosives, cyanide, volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], and polychlorinated biphenyls [PCBs]).

Initially, concentrations of detected metals were compared to the established background values. Any metal that was detected at a concertation exceeding the corresponding background level was further evaluated to determine if it should be considered as contamination or could be indicative of a release at the AOC. Since there is no established background level for organic chemicals such as propellants, this initial comparison was not completed for any detected organic chemical. The concentration of all detected organic compounds were assessed and metals whose concentrations exceeded their respective background values were compared to the most stringent Resident Receptor's (adult and child) FWCUGs at the 1×10^{-6} target cancer risk level or the 0.1 Hazard Quotient (HQ). This comparison was completed for sample results for both surface and subsurface soils.

No propellants and perchlorates were not detected at concentrations greater than the laboratory detection limits in the subsurface soil samples. There were several metals that had maximum concentrations that exceeded the established background values: antimony, cadmium, selenium, silver, and thallium. None of these metals in the subsurface soil samples had maximum concentrations that exceeded the most stringent FWCUG for the Resident Receptor. Therefore, no contamination was identified in the subsurface soils at CC RVAAP-80.

No propellants, pesticides, SVOCs, PCBs, or perchlorate were detected at concentrations greater than their respective detection limits and were therefore considered to be non-detected in the surface soil at the AOC. No VOCs were detected in surface soil except acetone at an estimated concentration. Acetone is not considered indicative of contamination since it is a common laboratory contaminant.

There were several metals that had maximum concentrations that exceeded the established background values in the surface soils: antimony, cadmium, chromium, lead, selenium, silver, thallium, and zinc. None of these metals had maximum concentrations that exceeded the most stringent FWCUG for the Resident Receptor. Therefore, no contamination was identified in the surface soils at CC RVAAP-80.

Based on the results from both the 2011 SI and this SI, no contamination or evidence of a release at the AOC was identified. Propellants and other MCs are not present in the surface and subsurface

soils at concentrations great enough to need additional evaluation. Soils are not a source of contamination to receptors or to a groundwater pathway to receptors. No other media (e.g., sediment or surface water) are present at the Site. Additional investigation is not warranted, and No Further Action (NFA) determination was made for this AOC.

SECTION 1: INTRODUCTION

This Site Inspection (SI) report describes the activities performed to complete an evaluation of potential soil contamination at the Compliance Restoration (CR) Army Environmental Compliance-Related Cleanup Program) (CC) RVAAP-80 Group 2 Propellant Can Tops Area of Concern (AOC) at the former Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. All work was conducted in accordance with the *Revised* Final Project Work Plan for Site Inspections at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops, Revision 1 (PIKA, 2016). Work was originally authorized under contract W912QR-12-F-0212 issued to PIKA International, Inc. (PIKA) by U.S. Army Corps of Engineers, Louisville District (USACE). Due to delays in the cleanup program at the former RVAAP that were unrelated to PIKA's performance, PIKA could not complete this document before the Contract ended and the document was left as a Draft in December 2016. Therefore, USACE has revised and finalized this SI.

This SI Report describes the procedures, activities, and resources PIKA used to complete the following tasks:

- The geophysical anomalies identified during the 2011 SI of the Group 2 Propellant Can Tops area of concern (AOC) were reacquired and a surface clearance was conducted to remove all munitions packaging material (propellant cans and tops) associated with the anomalies. The recovered propellant cans and tops were inspected and certified as scrap, safe for recycling.

- Surface and subsurface soil samples were collected and analyzed for three common propellants used by the DoD (nitrocellulose, nitroglycerine, and nitroguanidine), target analyte list (TAL) metals, and perchlorate. One of the samples was also analyzed for the RVAAP full suite (explosives, cyanide, volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], and polychlorinated biphenyls [PCBs]).

- Inspection Derived Waste (IDW) was sampled and properly disposed.

1.1 Objectives

This purpose of this SI was to evaluate if soils at the AOC have propellants or other munitions constituents (MC) present at concentrations great enough to be defined as contamination. The evaluation was completed specifically at locations where discarded munitions packaging material (propellant cans and tops) were identified by visual and geophysical surveys. The sample data were assessed to evaluate the presence or absence of contamination, and whether or not there had been a release at the AOC. Contamination is identified if the detected concentrations of propellants and/or MC constituents were greater than the Facility Wide Cleanup Goals (FWCUGs) established for the Resident Receptor at RVAAP in surface or subsurface soils. Data for this SI included the collection of all propellant cans, can tops, and related debris at or near the surface (based upon the anomalies identified during the 2011 Geophysical Survey that was conducted as part of the 2011 SI). In addition, all collected debris was inspected, certified, and disposed in accordance with DoDI 4140.62.

1.2 Description of RVAAP

When the RVAAP Installation Restoration Program (IRP) began in 1989, the RVAAP was identified as a 21,419-acre installation. The property boundary was resurveyed by the Ohio Army National Guard (OHARNG) over a two-year period (2002 and 2003), and the actual total acreage of the property was found to be 21,683 acres. The facility is in northeastern Ohio within Portage and Trumbull counties, approximately 4.8 kilometers (3 miles) east/northeast of the City of Ravenna and approximately 1.6 kilometers (1 mile) northwest of the City of Newton Falls. Figure 1 presents a regional map with the location of the former RVAAP/Camp Ravenna. The location of the AOC within the RVAAP/Camp Ravenna is shown in Figure 2. The figures are included at the end of this SI report.

1.3 Operational History of RVAAP

The facility, previously known as the RVAAP, was formerly used as a load, assemble, and pack facility for munitions production. As of September 2013, administrative accountability for the entire acreage of the facility has been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio and subsequently licensed to the OHARNG for use as a military training site known as the Camp Ravenna Joint Military Training Center (Camp Ravenna). References in this document to RVAAP relate to previous activities at the facility as related to former munitions production activities or to activities being conducted under the restoration/cleanup program.

Production at the facility began in December 1941, with the primary missions of depot storage and ammunition loading. The installation was divided into two separate units; the Portage Ordnance Depot and the Ravenna Ordnance Plant. The Portage Ordnance Depot's primary mission was storage of munitions and components, while the mission of the Ravenna Ordnance Plant was loading and packing major caliber artillery ammunition and the assembly of munitions initiating components that included fuzes, boosters, and percussion elements. In August 1943, the installation was re-designated the Ravenna Ordnance Center and again in November 1945, as the Ravenna Arsenal. The plant was placed in standby status in 1950; and operations were limited to renovation, demilitarization and normal maintenance of equipment, along with storage of ammunition and components.

The plant was reactivated during the Korean Conflict to load and pack major caliber shells and components. All production ended in August 1957 and in October 1957, the installation was again placed in a standby condition. In October 1960, the ammonium nitrate line was renovated for demilitarization operations that involved melting explosives out of bomb casings for subsequent recycling. These operations commenced in January 1961. In July 1961, the plant was again deactivated. In November 1961, the installation was divided into the Ravenna Ordnance Plant and an industrial section, with the entire installation then being designated as the RVAAP.

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

Until 1993, RVAAP maintained the capability to load, assemble, and pack military ammunition. As part of the RVAAP mission, the inactive facilities were maintained in a standby status by keeping equipment in a condition to permit resumption of production within prescribed limitations. In September 1993, the RVAAP was placed in inactive caretaker status, subsequently changed to modified caretaker status. The LLs and associated real estate were determined to be excess by the Army. As of September 2013, all 21,683 acres of the former RVAAP have been transferred to the USP&FO for Ohio for use by OHARNG as a military training site, now called Camp Ravenna.

1.4 History of CC RVAAP-80

The CC RVAAP-80 AOC is located at the southern end of the former Group 2 Ammunition Storage Area. The propellant cans and tops were initially identified on the ground surface and near surface (9-inch depth maximum) by OHARNG in the winter of 2008. The propellant cans and tops were observed in the vegetated area located immediately south of the ammunition storage magazines near the southern railroad spur lines (Figure 3). This area consists of approximately 539,572 square feet (12.4 acres).

The propellant cans and tops are not munitions. These materials are components of the shipping containers that were used to transport the propellant to the appropriate firing point. Currently, shipping containers and packing materials are classified as material potentially presenting an explosive hazard (MPPEH) until inspection and verification that propellant has been removed. On completion of this inspection process, the items are immediately reclassified as material documented as safe (MDAS) and can be released to the public for disposal or recycling.

1.5 Prior Investigations at CC RVAAP-80

1.5.1 Emergency Survey

The USACE, Louisville District conducted an emergency survey of a portion of the southern area ground surface using a metal detector. Results of the initial inspection revealed multiple magnetic anomalies in surface and near surface soils. The anomalies did not extend below a depth of nine inches below ground surface (bgs). Personnel visually identified the surface anomalies as propellants cans and tops. During the emergency survey, it was noted that the ground surface had been disturbed and contained hummocks (mounds) ranging in height from one to two feet throughout the survey area. The historic aerial photos showed storage materiel on pallets in this area. The aerial photos did not show the area covered in gravel. Therefore, the hummocks were likely caused by the vehicles used to place or retrieve the pallets.

1.5.2 Geophysical Survey and Phase I Site Inspection

In April and May of 2011, a Geophysical Survey of the Group 2 Propellant Can Tops Site (12.4 acres) was conducted and three surficial incremental soil samples were collected. An EM-61MK2 was used to conduct the geophysical survey that identified five clusters of ferrous (magnetic) items at or near the surface, as well as other scattered ferrous items (see Figure 4). The Geophysical Survey confirmed that tops and cans were not buried at CC RVAAP-80. See Appendix D of the *Final Inspection Report for Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops and Other Environmental Services* (PIKA, 2012) for detailed results of the inspection. Three

of the clusters of ferrous items (Clusters 1, 3 and 5) identified in the geophysical inspection were selected as incremental sampling methodology (ISM) sample locations.

The ISM soil samples were analyzed for the target analyte list (TAL) metals and perchlorate and three common propellants that were used by the DoD (nitrocellulose, nitroglycerine, and nitroguanidine). One sample was analyzed also for the RVAAP full suite, (explosives, cyanide, volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], and polychlorinated biphenyls [PCBs]). The three samples did not contain any chemicals with concentrations that exceeded their respective FWCUGs. However, additional soil investigation was considered necessary to further evaluate the potential for contamination in the surface and subsurface soils in the areas at and surrounding where the propellant cans and tops were most dense.

The geophysics work was preceded by wetland delineation and vegetation clearance. The field team was led by an unexploded ordnance (UXO) technician, and no munitions and explosives of concern (MEC) or munitions debris (MD) were encountered on the surface during any aspect of the work.

SECTION 2: SITE INSPECTION ACTIVITIES

All site inspection activities were completed in accordance with the Revised Final Project Work Plan for Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops, Revision 1 (PIKA, 2016). The field work was completed in three phases: anomaly reacquisition and collection of MPPEH; vegetation clearance and site survey; and ISM surface and subsurface soil sampling.

The following operations were completed as part of this SI in three phases:

Phase 1

- March 28 through 30, 2016 - Mobilization and reacquisition of anomalies, MPPEH recovery, MDAS certification and recycling.

Phase 2

- April 4 through 9, 2016 – Mobilization, brush clearance, and survey of ISM surface and subsurface clusters.

Phase 3

- April 11 through 13, 2016 – Mobilization and collection of surface and subsurface ISM soil samples in eight anomaly clusters; and

- May 9 and 10, 2016 – Transportation and disposal of IDW.

The details of each of the operations listed above are provided in the following subsections. Photographic documentation is provided with the Daily Reports provided in **Appendix A**.

2.1 Mobilization and Site Preparation

During each mobilization, site management personnel coordinated with the Camp Ravenna Environmental Office and Range Control to ensure access and communications requirements. All project personnel and subcontractors mobilized to the site met requirements for Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training and medical surveillance requirements as specified in the Accident Prevention Plan (APP)/Site Safety and Health Plan (SSHP). All personnel were trained to perform the specific tasks to which they were assigned.

2.1.1 Equipment

All equipment was inspected as it arrived to ensure proper working order. Instruments and equipment that required routine maintenance and/or calibration were checked initially upon arrival and then checked again prior to use each day.

As part of the initial equipment set-up and testing, the following communication equipment was installed and tested:

- Cellular Phone Service to maintain communication with RVAAP security personnel.
- Hand-held portable radios used to maintain communications between the Project Manager and the UXO Technician III (UXOT III)/Team Leader.

2.1.2 Site-Specific Training

As part of the mobilization process, site-specific training was conducted for all on-site personnel assigned to this project. The purpose of this training was to ensure that all on-site personnel fully understood the operational procedures and methods to be used at the facility and the AOC. Individual assigned responsibilities and safety and environmental concerns associated with site operations were also covered in the training. The Senior UXO Supervisor (SUXOS)/UXO Safety Officer (UXOSO) conducted the training sessions which included the topics identified below.

- Field equipment operation, including the safety and health precautions, inspection, and maintenance procedures;
- Review of relevant sections of the Final Work Plan (PIKA, 2016) and APP/SSHP as they related to the tasks that were performed;
- Discussion of potential site and operational hazards associated with site-specific tasks and operations;
- Discussion of environmental concerns including the location of wetlands; and
- OSHA or USACE required training per the approved APP.

2.1.3 Permitting

No permits were required for the execution of project tasks.

2.1.4 Site Control

The Group 2 Propellant Can Tops AOC was identified as low probability site in regards to encountering MEC. However, the propellant tops and cans are considered MPPEH until inspected and certified as MDAS. In accordance with Engineering Pamphlet 75-1-2, *Munitions and Explosives of Concern (MEC) Support During Hazardous, Toxic, and Radioactive Waste (HTRW) and Construction Activities, a* Minimum Separation Distance (MSD) was not required. However, as a precaution, a 200-foot diameter exclusion zone (EZ) was implemented during the inspection operations for site control and security purposes. The EZ included areas used for military training and a portion of Paris-Windam Road. Vehicular traffic was temporarily halted on Paris-Windam Road during the field efforts. The temporary road closures did not impact facility or training operations.

2.2 Anomaly Reacquisition and Collection of MPPEH

A four-man team of UXO technicians reacquired the anomalies identified during the 2011 geophysical survey. The team included a SUXOS, a UXO Safety/Quality Control Specialist (UXOQCS), a UXOT III and a UXO Technician II (UXOT II). The anomaly reacquisition, recovery and MDAS certification tasks were completed between March 28 and March 30, 2016. The UXO team marked each reacquired anomaly with a pin flag. Using a magnetometer, the team inspected a 1-meter radius around each pin flag to depth, removing all (100%) of the target magnetic anomalies (propellant cans and tops) and occasional unrelated materials such as railroad spikes and packing debris (banding/strapping) during this effort. The unrelated materials were removed to limit potential magnetic interferences. The items were accumulated at onsite collection points to facilitate the follow-on MDAS inspection.

Once the anomaly reacquisition and propellant cans and tops recovery task was complete, the UXO team inspected each individual item to determine and certify them as MDAS. Each item received two 100% inspections by the UXOT III and UXOT II. Then the SUXOS and UXOSOQC verified and certified the items as MDAS. All items recovered during this effort were certified MDAS and transported to the local recycling facility. No propellant can, can top, non-packing item, or munition related item encountered was determined to present a potential explosive hazard or identified as Material Documented with an Explosive Hazard (MDEH).

The MDAS remained in the custody of the SUXOS and UXOQC until possession was transferred to the recycling facility, Falls Recycling, LLC. The SUXOS and UXOSOQC prepared and signed the DD Form 1348-1A. Daily Reports and photos of the MPPEH Propellant Cans and Tops collection and inspection are provided in **Appendix A**. More than 530 propellant can tops, propellant cans, and a collection of miscellaneous metal scrap (e.g. rail road spikes, t-posts, wrenches, conduit, nuts bolts and nails) were recovered and recycled. A total of 1,760 pounds of propellant cans, can tops, and scrap metal certified as MDAS were delivered to Falls Recycling, LLC on March 30, 2016. A summary of the items collected from each anomaly, DD Form 1348-1A scrap metal MDAS Certification, and the recycling records are provided in **Appendix E**.

2.3 Vegetation Removal and Site Surveying

Vista Sciences Corporation conducted manual and mechanical brush removal at the Site before completing the surface and subsurface ISM tasks. Brush removal operations were conducted between April 4 and April 9, 2016. The crew cut and removed ground-level vegetation in each of the eight ISM sampling grids to provide clear access for sampling. This was accomplished primarily with the use of a Bush Hog and hand-held weed eaters. All vegetation removal was coordinated with the Camp Ravenna Environmental Office.

Once the brush clearance activities were complete, Vista Sciences Corporation personnel surveyed in the corners of the eight ISM sampling grids. Five of the sampling grids were placed in grid clusters identified in 2011 (Figure 4) and three grids were placed in additional clusters added for this effort. The eight grid locations are shown on Figure 5 and the survey data is included in **Appendix D**.

2.4 Surface and Subsurface Incremental Soil Sampling

The ISM surface and subsurface soil samples were collected in accordance with the approved Work Plan and associated Sampling and Analysis Plan Addendum (SAP) included Appendix D of the Work Plan (PIKA, 2016). No deviations from the Work Plan or SAP were encountered. The ISM sampling event was completed between April 11 and April 13, 2016.

As indicated in Figure 5, the eight clusters that were selected to be assessed in this SI were geographically- separated areas within the AOC boundaries. The sample locations were selected to ensure that areas where the greatest occurrences of magnetic anomalies were clustered would be sampled. It is assumed that these areas would be most likely to contain contamination, if present. As described in Section 2.3, the clusters (sample locations) were cleared of brush ground-level vegetation in each of the eight ISM sampling grids to provide clear access for sampling.

Once the brush clearance activities were complete, Vista Sciences Corporation personnel surveyed in the corners of the eight ISM sampling grids. Five of the sampling grids were placed in grid clusters identified during the 2011 SI (Figure 4 and Figure 5) where the number of anomalies were the densest, and three grids were placed in additional clusters added for this effort. It was determined that the three additional clusters (clusters 6, 7, and 8) were needed to fully assess areas on the periphery of the AOC such as Anomaly Cluster 6. The other two Cluster Areas (7 and 8) were outside of the five Clusters identified in the 2011 SI. The selection of the location of the three subsurface ISM samples (one to four feet bgs), and five surficial ISM samples (zero to one foot bgs) were completed specifically at locations where discarded munitions packaging material (propellant cans and tops) were identified by visual and geophysical surveys. The numbers of anomalies, survey data, and locations of both the 2011 clusters and the 2016 clusters are presented on Figure 5.

A stratified random approach was used in each of the eight gridded ISM locations and 30 aliquots were collected from each. As described in the SAP, a Geoprobe® Direct Push rig with a dedicated sampling probe was used in each of the subsurface grids to collect the sample aliquots from one to four feet bgs. The soils were logged and described using the Unified Soil Classification System. The surface ISM aliquots were similarly collected from the designated grids using a ¾ inch diameter dedicated stainless steel step probe from zero to one foot bgs.

The aliquots from each sampling grid were collected in a dedicated stainless steel bowl, homogenized, and placed in a sample container labeled for that grid location. Sample PCTss-006M-001-SO, collected in ISM sample Area 2, was selected for the RVAAP full suite of analyses because of the high density of propellant can tops and propellant cans removed during the MPPEH/MDAS certification task. For the VOC component of the RVAAP full suite sample, one discrete aliquot was collected from Anomaly Grid 4 (Sample PCTss-006M-001-SO). Since no soil staining or signs of potential VOC contamination was observed within this grid, the discrete VOC sample was biased toward the location where the most propellant can tops were located. The VOC sample was placed directly in the sample container and was not composited or further processed in the field or laboratory. Additional details pertaining to the collection of these surface and subsurface ISM are provided in the SAP Addendum and Quality Assurance Project Plan (QAPP) Addendum (Appendices D and E of the Work Plan, [PIKA, 2016]).

The ISM samples were shipped overnight to the laboratory following the custody procedures described in the SAP. At the laboratory, the ISM samples were processed as required by U.S. Environmental Protection Agency (USEPA) Method SW8330B (i.e., dried, sieved, and finely ground) for specific constituent analysis. All samples were analyzed for the three common propellants (nitrocellulose, nitroglycerine, and nitroguanidine), TAL metals, and perchlorate. One of the samples was analyzed also for the RVAAP full suite of analytes (explosives, cyanide, VOCs, SVOCs, and PCBs). The sample numbers, quality control samples and analyses per ISM grid location are listed in Table 1 (included at the end of this SI Report. The following USEPA Analytical Methods were used:

- Nitrocellulose by Method 353.2
- Nitroglycerine and explosives by Method 8330B
- Nitroguanidine by Modified Method 8330
- Perchlorate by Method 6850
- TAL Metals by Method 6010C
- Mercury by Methods 7470A (aqueous) and 7471A (solid)
- Cyanide by Method 9012
- Pesticides by Methods 8081A (aqueous) and 8081B (solid)
- PCBs by Method 8082A
- SVOCs by Method 8270D
- VOCs by Method 8260C

Analytical results are provided in **Appendix B** and the Automated Data Review (ADR) and Third Party Data Validation Reports are provided in **Appendix C**. All samples were delivered to TestAmerica in Canton, Ohio and forwarded to Environmental Laboratory Accreditation Program (ELAP) certified TestAmerica West Sacramento, California for analysis.

2.5 Summary of Sample Results

This section summarizes the results of the 2011 and 2016 sampling events. The concentrations of the chemicals detected in the surface and subsurface soil samples were evaluated using a screening and comparative process established in the Facility Wide Human Health Risk Assessor's Manual (USACE, 2005) and the Position Paper on the Use and Applicability of FWCUGs (USACE, 2012). The process is modified from what is used in risk assessments so that the decision criteria is the determination of whether or not there is contamination present and or is there any indication there has been a release.

The sampling locations are shown on Figure 5. Analytical results, background criteria, and screening criteria are presented in Table 2 for propellants, metals, and perchlorate in the subsurface ISM samples; Table 3 for the explosives, cyanide, VOCs, SVOCs, pesticides, and PCBs in the surface ISM samples; and Table 4 for the propellants, metals, and perchlorate ISM surface soil samples. Electronic copies of the 2016 laboratory data packages are included in **Appendix B** on compact disk. Analytical data for the 2011 sampling event is found in the "*Final Inspection Report for Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops and Other Environmental Services* (PIKA, 2012).

2.5.1 Data Evaluation Process

The data were evaluated using a screening process. The process generally follows the procedures described in the Revised United States Army Corps of Engineers Ravenna Army Ammunition Plant (RVAAP) Position Paper for the Application and Use of Facility-Wide Human Health Cleanup Goals (USACE, 2012). However, the screening process in this SI was completed to identify if contamination was present or if there was an indication that a release occurred on the AOC. The background concentrations and the FWCUGs can be found in the Facility-wide Human Health Remediation Goals, Ravenna Army Ammunition Plant, Ravenna, Ohio, March 2010 (FWCUG Report).

The data evaluation process used in this SI is as follows:

1.) Compare the maximum value of inorganics detected in surface soil and subsurface soil samples to those of their respective for the established for RVAAP-background concentrations. Eliminate inorganic chemicals from further evaluation if the maximum is less than the established background concentration.

2.) Compare the maximum concertation of any detected organic chemical and the maximum concentration of any inorganic chemicals that exceeded the background value to the most stringent of the Resident Receptor's FWCUGs at the 1 X 10^{-6} target cancer risk and the non-carcinogenic Hazard Quotient (HQ) using the 0.1 risk value. Use USEPA's Residential Regional Screening Levels (RSLs) for chemicals that do not have a FWCUG developed.

3.) Eliminate chemicals from further evaluation if the maximum is less than the most stringent Resident Receptor's FWCUG for that chemical. If all chemicals are eliminated, then consider the AOC as an NFA determination.

4.) Complete a Weight of Evidence (WOE) Evaluation of chemicals with maximum concentration(s) that exceeded the most stringent FWCUG for the Resident Receptor.

5.) If results of the WOE Evaluation indicate the presence of contamination or indicate that there has been a release at the AOC, then consider additional investigation is warranted.

2.5.2 Analytical Results

Three ISM surface soil samples were collected on May 26, 2011 and analyzed for TAL metals, common propellants used by DoD nitrocellulose, nitroglycerine, nitroguanidine and perchlorate.

Additionally, one of the samples was analyzed for the full suite of analytes as prescribed in the Facility Wide SAP (USACE, 2011). The three sampling locations are shown on Figure 5. As stated previously, these three sample locations were biased since the locations were not selected randomly.

A narrative summary of the 2011 analytical results and results of the screening process are summarized as follows.

- Cadmium, lead, mercury, and zinc were detected in sample PCTss-001M-0001-SO at concentrations greater than their respective background concentrations but less than their respective FWCUGs.

- Perchlorate and propellants were detected in samples PCTss-001M-0001-SO and PCTss-003M-0001-SO at concentrations less than the reporting limit but greater than the detection limit and the results were flagged as estimated.

- Acetone was detected in sample PCTss-001M-0001-SO at a concentration less than the reporting limit but greater than the detection limit and the result was flagged as estimated.

Three subsurface ISM samples (1-4' bgs), and five surficial ISM samples (0-1' bgs) were collected April 11 and April 13, 2016. The sampling locations are shown on Figure 5. The results are summarized as follows:

Subsurface Soils (Table 2):

- Propellants were not detected at concentrations greater than the laboratory detection limits for these samples.

- Perchlorate concentrations were less than the detection limit or were reported at estimated concentrations.

- There were several metals that had maximum concentrations that exceeded the established background values: antimony, cadmium, selenium, silver, and thallium. None of these metals had maximum concentrations that exceeded the most stringent FWCUG for the Resident Receptor.

Surface Soil (Tables 3 and 4):

- No SVOCs, PCBs, or perchlorate were detected at concentrations greater than their respective detection limits and were therefore considered to be non-detected.

- The only VOC that was detected was acetone and it was reported as an estimated value. No other VOCs were detected at concentrations greater than their respective detection limits. Acetone was not assessed further since it is a common laboratory contaminant and was not detected in other samples or in concentrations greater than the detection limit. Acetone is not indicative of contamination.

- Reported concentrations of all pesticides, except for alpha-chlordane and delta-BHC, were less than the method detection limits. Alpha-chlordane and delta-BHC were reported at estimated concentrations.

- Propellants were reported at concentrations less than the method detection limit, except for nitrocellulose, which was reported at estimated concentration from two of the six samples collected.

- There were several metals that had maximum concentrations that exceeded the established background values in the surface soils: antimony, cadmium, chromium, lead, selenium, silver, thallium, and zinc. None of these metals had maximum concentrations that exceeded the most stringent FWCUG for the Resident Receptor.

2.6 Data Validation

The analytical methods used for analysis of the Group 2 Propellant Can Tops Site samples are defined in the Facility-Wide SAP and QAPP and listed in Section 2.5. The full analytical results are provided in **Appendix B** and the ADR and third party data validation reports are provided in **Appendix C**. All the samples were delivered to TestAmerica in Canton, Ohio and forwarded to ELAP certified TestAmerica Sacramento for analysis. Laboratory results include documentation verifying compliance with sample log-in procedures, analytical holding times, and quality control procedures for analyses. The laboratory also provided information about the percent of recovery attained in laboratory spike samples, calibration curves (initial and continuing) dilutions, and detection limits. The laboratory applied data qualifiers or "flags" to the reported data based on a comparison of the parameters described above to their respective quality assurance requirements.

All sample results were systematically verified using the ADR software (Level II Validation) following which the data received a Level IV validation by Purves Environmental in Hudson, Ohio in accordance with the project specified QAAP, DoD Quality System Manual (QSM), and the National Functional Guidelines for Data Validation and USEPA SW-846 Test Methods for Evaluating Solid Waste. The validation process was conducted to ensure that the precision and accuracy of the analytical data were adequate for their intended use. The validation process minimizes the potential of using false results in the decision-making process and ensures that detected and non-detected compounds were accurately identified.

The third-party data validation effort determined that all samples were properly analyzed, diluted as needed, quantitated and that no problems were encountered with the system performance of any of the instruments. The mercury analysis for the subsurface soils samples (except for samples PCTss-002M-001-SO and PCTss-006M-001-SO) and the associated Equipment Rinsate were analyzed beyond the 28-day holding time.

The mercury data were qualified as estimated, and biased low. The antimony result for sample PCTsb-003M-001-SO was rejected because of low matrix spike recovery. All other data are complete and usable. The findings of the third-party data validation effort are provided in **Appendix C**.

2.7 Disposal of IDW

The ISM surface and subsurface soil samples were collected using pre-decontaminated, dedicated, ¾-inch stainless steel step probes and Geoprobe® sampling devices with single use acetate liners. The IDW generated during the implementation of this field effort included the soil cuttings and acetate liners from the subsurface ISM sampling, and the sampling personal protective equipment (i.e., surgical gloves). All IDW was containerized in two 55-gallon, open top drums, labeled, stored, managed and disposed of in accordance with the Camp Ravenna Waste Management Guidelines dated 30 March 2015 and the Facility Wide SAP.

The IDW was generated between April 11, 2016 and April 13, 2016. On April 13, 2016, one composite waste sample was collected from the drums and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) VOCs, SVOCs, metals, pesticides, herbicides, total sulfide, total cyanide, corrosivity (pH) and flashpoint to characterize the waste stream for disposal. Based on the analytical results, the IDW stream was classified as nonhazardous, non-contaminated.

The drums were picked up from Camp Ravenna by Republic Services on May, 9, 2016 and disposed of at the Carbon Limestone Landfill, in Lowellville, Ohio on May 10, 2016. The Inspection Derived Waste Letter Report for the Propellant Can and Tops IDW, Weekly Inspection Forms, and the signed manifest for disposal are provided in **Appendix F**.

SECTION 3: CONCLUSIONS

The purpose of the Group 2 Propellant Can Tops SI was to achieve the following objectives:

- Collect munitions packaging material (propellant cans and tops) at or near the geophysical anomalies identified during the 2011 SI of the AOC and inspect, certify, and dispose in accordance with DoDI 4140.62.

- Confirm the presence or absence of propellants and/or other MC in surface and subsurface soils at the AOC.

The defined objectives were achieved as summarized below:

- All anomalies identified during the 2011 Propellant Cans and Tops SI were successfully reacquired. The associated propellant cans and tops were collected, inspected confirmed and certified as MDAS. All MDAS was recycled.

- The ISM surface soil samples were collected in areas where high densities of propellant can tops, propellant cans, or other ferrous metals were identified by the Ohio Environmental Protection Agency based on the data collected during the 2011 SI geophysical inspection. Subsurface soil samples were collected to determine whether propellants migrated to subsurface soil with the infiltration of rain/snowmelt.

No propellants and perchlorates were detected at concentrations greater than the laboratory detection limits in the subsurface soil samples. There were several metals that had maximum concentrations that exceeded the established background values: antimony, cadmium, selenium, silver, and thallium. None of these metals in the subsurface soil samples had maximum concentrations that exceeded the most stringent FWCUG for the Resident Receptor. Therefore, no contamination was identified in the subsurface soils at CC RVAAP-80.

No propellants, pesticides, SVOCs, PCBs, or perchlorate were detected at concentrations greater than their respective detection limits and were therefore considered to be non-detected in the surface soil at the AOC. The only VOC that was detected was acetone and it was reported as an estimated value. No other VOCs were detected at concentrations greater than their respective detection limits. Acetone was not assessed further since it is a common laboratory contaminant and was not detected in other samples or in concentrations greater than the detection limit. Acetone is not indicative of contamination.

There were several metals that had maximum concentrations that exceeded the established background values in the surface soils: antimony, cadmium, chromium, lead, selenium, silver, thallium, and zinc. None of these metals had maximum concentrations that exceeded the most stringent FWCUG for the Resident Receptor. Therefore, no contamination was identified in the surface soils at CC RVAAP-80.

Based on the results from both the 2011 SI and this SI, no contamination or evidence of a release at the AOC was identified. Propellants and other MCs are not present in the surface and subsurface soils at concentrations great enough to need additional evaluation. Soils are not a source of

contamination to receptors or to a groundwater pathway to receptors. No other media (e.g., sediment or surface water) are present at the Site. Additional investigation is not warranted, and NFA determination was made for this AOC.

SECTION 4: REFERENCES

Department of Defense Instruction (DoDI) 4140.62. Management and Disposition of Material Potentially Presenting an Explosive Hazard (MPPEH)

Engineering Pamphlet 75-1-2, Munitions and Explosives of Concern (MEC) Support During Hazards, Toxic, and Radioactive Waste (HTRW) and Construction Activities

OHARNG, 2015. Camp Ravenna Waste Management Guidelines, March.

PIKA, 2012. Final Inspection Report for the Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops and Other Environmental Services, RVAAP, Ravenna, Ohio. January.

PIKA, 2016. Revised Final Project Work Plan for Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops, Revision 0, January.

PIKA, 2016. Revised Final Accident Prevention Plan for Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops, Revision 0, January.

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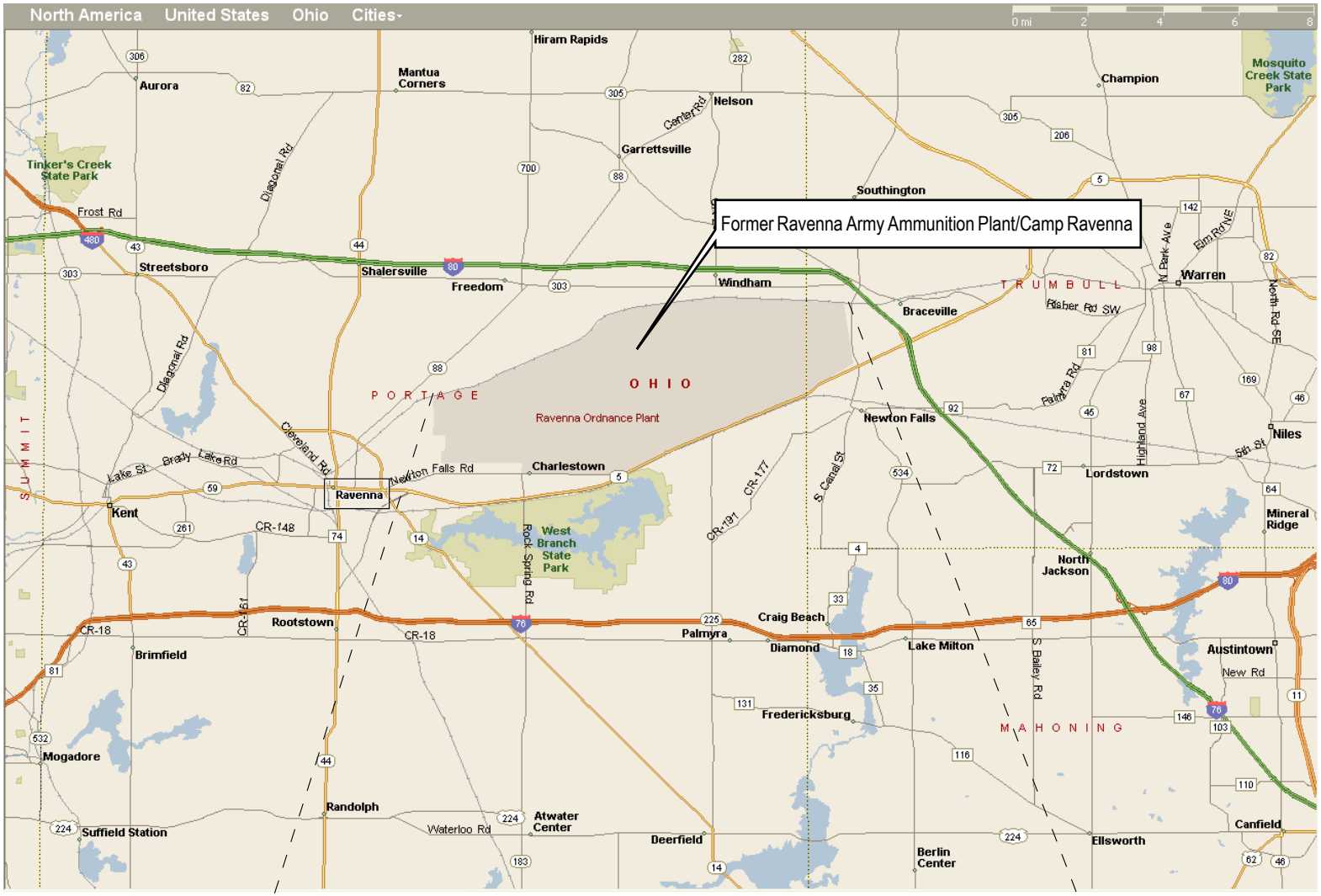
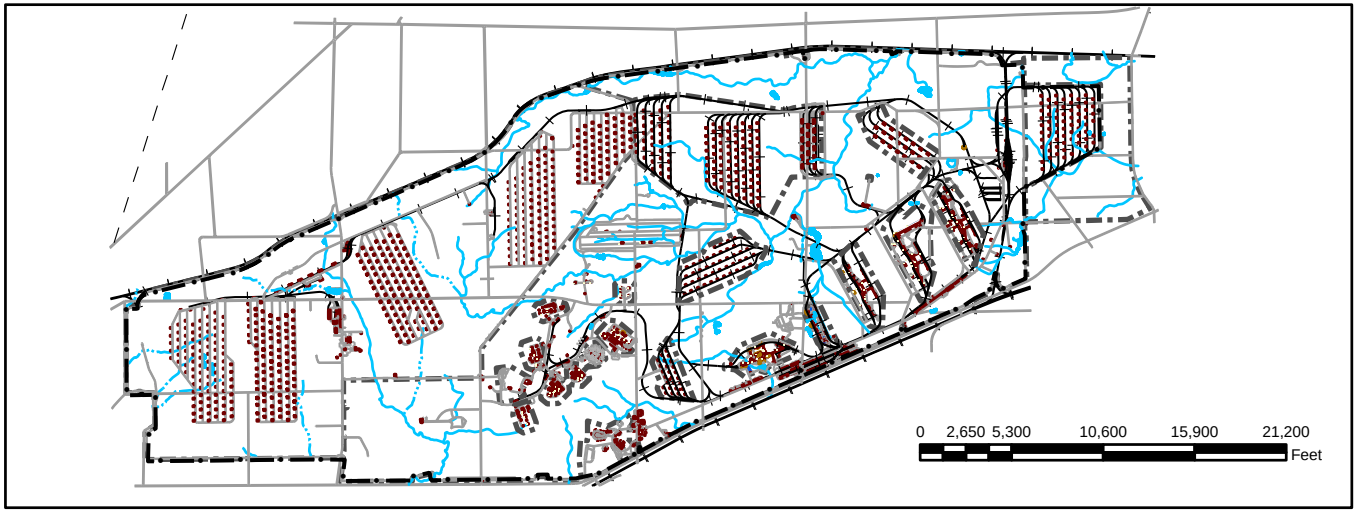
USACE, 2011. Facility-Wide Sampling and Analysis Plan for Environmental Inspections, Revision 0, Ravenna Army Ammunition Plant, Ravenna, OH, W912QR-08-D-0008, Delivery Order No. 0016, Science Applications International Corporation. February.

USACE, 2012. Revised United States Army Corps of Engineers Ravenna Army Ammunition Plant (RVAAP) Position Paper for the Application and Use of Facility-Wide Human Health Cleanup Goals. Science Applications International Corporation. February.

Figures





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12723 Capricorn Dr. Ste#500
Stafford, TX 77477

Former Ravenna Army Ammunition Plant/Camp Ravenna, Ravenna, OH

FIGURE 1. General location and orientation of Camp Ravenna, Ravenna, Ohio.

Revised by USACE, May 2017

CC RVAAP-80 GROUP 2 PROPELLANT CAN TOPS SITE

Legend
- Water Bodies
- Buildings
- Walkways
- Railroads
- Berms
- CC RVAAP-80 Group 2 Propellant Can Tops Site

Slagle Road
BlockD Road1
BlockD Road3
BlockD Road5
BlockD Road7
South D Road
Greenleaf Road
WP Lane E
WP Lane C
WP Lane A
WP Lane B
Winklepeck Road
OD-2 Road
WS Road
Newton Falls Road
George Road
FB Stor Road
Wilcox-Wayland Road
Paris-Windham Road
Load Line 4 Road
Load Line 12 Road
Route 5
South Service Road
Load Line 3 Road
Load Line 2 Road
LL-3 Road
LL-2 Road
LL-1 Road
Storage Area 6 Road
Wye Road
Patrol Road
Butts-Kistler Road
Remalia Road
Sectioning Area Road
Ramsdell Road
South Patrol Road
WH44 Road
Fuze and Booster Road
Demolition Road
Demolition Road
Dormitory Road
George Rd
New Newton Falls Road

N

0 1,500 3,000 6,000 9,000 12,000 Feet

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FIGURE 2. Location of the Compliance Restoration Site CC RVAAP-80, Group 2 Propellant Tops AOC.

Revised by USACE, May 2017

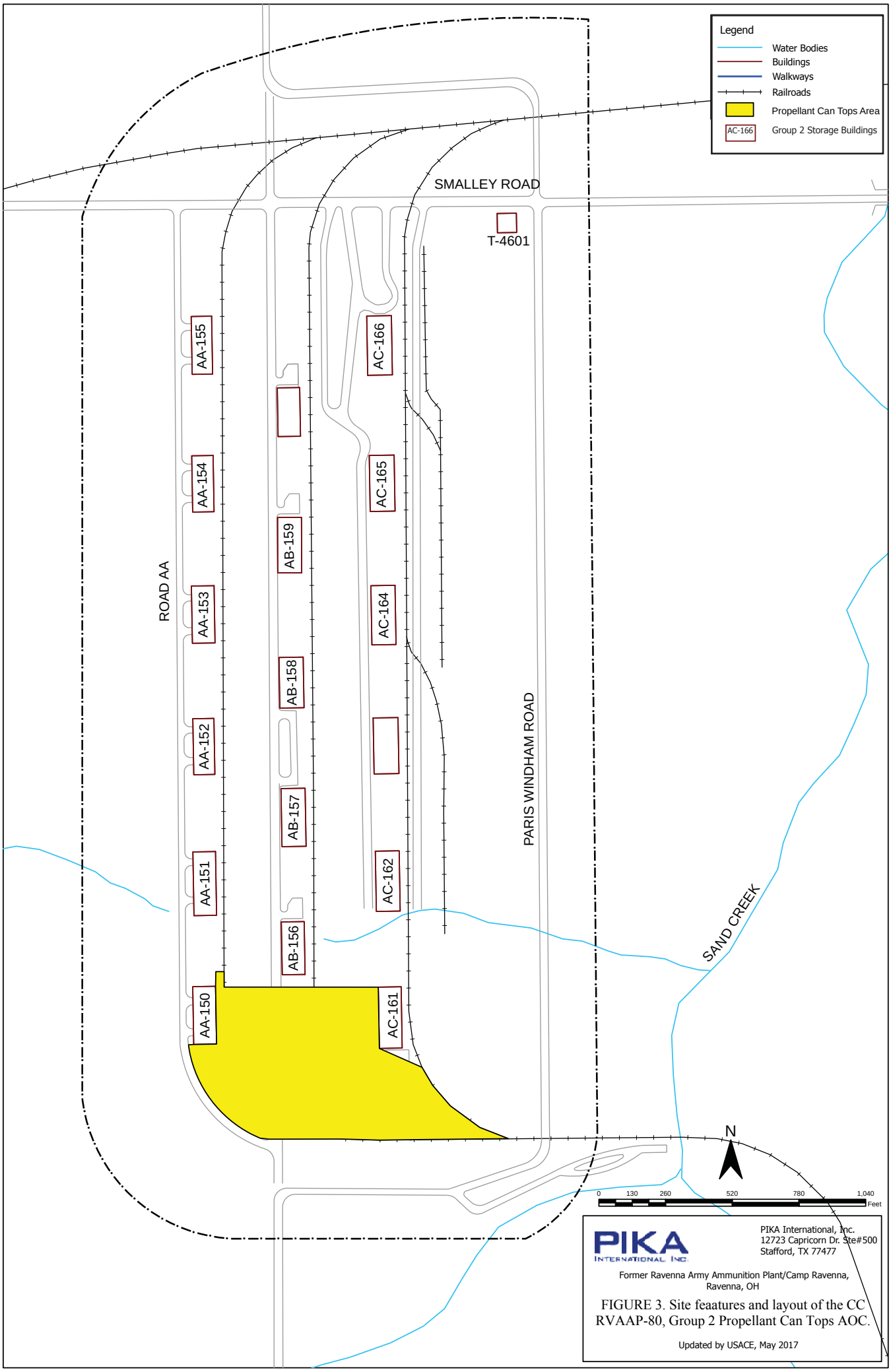

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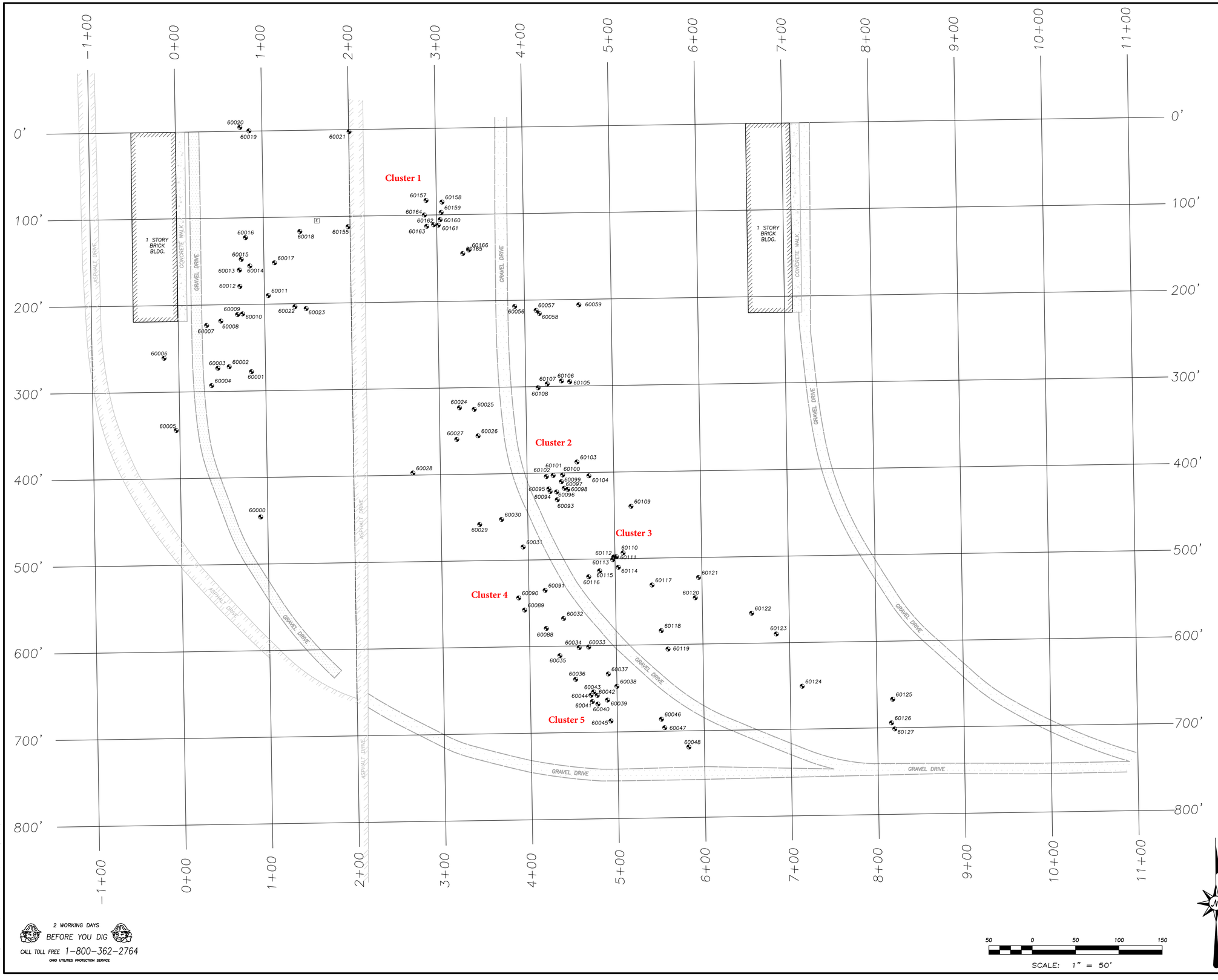
FIGURE 3. Site feaatures and layout of the CC RVAAP-80, Group 2 Propellant Can Tops AOC.

Updated by USACE, May 2017



Flag	Northing	Easting	Station	Offset
60005	566362.4	2367508.6	-0+4.2	344.3
60006	566445.7	2367494.6	-0+17.0	260.8
60007	566483.7	2367543.7	0+32.7	223.6
60004	566414.2	2367549.5	0+37.5	293.1
60003	566434.2	2367556.7	0+44.9	273.2
60008	566488.6	2367560.1	0+49.2	218.9
60002	566436.0	2367569.8	0+58.1	271.7
60009	566496.2	2367579.5	0+68.7	211.6
60013	566547.6	2367581.6	0+71.5	160.3
60012	566528.7	2367582.1	0+71.8	179.1
60015	566559.9	2367583.8	0+73.9	147.9
60010	566497.1	2367585.3	0+74.5	210.8
60020	566712.3	2367582.1	0+74.6	-4.44
60016	566585.1	2367588.6	0+79.1	122.9
60014	566552.3	2367593.6	0+83.6	155.7
60001	566430.3	2367595.6	0+83.7	277.7
60019	566708.3	2367592.6	0+85.0	-0.29
60000	566262.5	2367606.2	0+91.8	445.7
60011	566518.2	2367614.9	1+04.4	190.2
60017	566555.9	2367622.1	1+12.1	152.5
60022	566505.4	2367645.7	1+35.0	203.4
60018	566592.1	2367651.3	1+41.9	116.8
60023	566503.1	2367658.6	1+47.9	205.9
60155	566597.7	2367707.1	1+97.8	112.0
60021	566707.4	2367708.1	2+00.5	2.4
60028	566313.3	2367781.9	2+68.2	397.5
60164	566611.1	2367795.1	2+86.0	100.0
60157	566628.0	2367797.0	2+88.1	83.2
60163	566598.1	2367797.8	2+88.5	113.0
60162	566599.9	2367805.8	2+96.5	111.4
60161	566599.4	2367811.0	3+01.8	111.9
60160	566605.8	2367813.2	3+04.0	105.5
60159	566614.2	2367814.5	3+05.4	97.2
60158	566626.1	2367815.4	3+06.5	85.3
60027	566352.0	2367832.5	3+19.4	359.6
60024	566388.6	2367835.6	3+23.1	323.1
60165	566566.7	2367839.4	3+29.6	145.1
60166	566570.8	2367846.3	3+36.5	141.1
60025	566386.8	2367852.7	3+40.1	325.1
60026	566356.1	2367857.1	3+44.1	355.9
60029	566253.8	2367859.0	3+44.4	458.2
60030	566259.6	2367884.2	3+69.7	452.8
60090	566169.1	2367904.0	3+88.1	543.6
60056	566505.7	2367899.4	3+88.6	207.0
60031	566227.9	2367909.1	3+94.2	484.9
60089	566155.1	2367910.8	3+94.7	557.7
60057	566501.1	2367924.0	4+13.2	212.0
60108	566411.8	2367926.4	4+14.3	301.3
60058	566497.5	2367927.8	4+16.9	215.6
60091	566177.8	2367934.5	4+18.7	535.4

Flag	Northing	Easting	Station	Offset
60088	566133.8	2367935.9	4+19.5	579.4
60102	566309.2	2367935.9	4+22.1	404.0
60095	566294.9	2367938.7	4+24.8	418.3
60107	566416.2	2367936.9	4+24.8	297.0
60094	566291.9	2367940.2	4+26.2	421.4
60101	566310.5	2367943.7	4+30.0	402.8
60096	566291.5	2367947.8	4+33.8	421.9
60093	566282.5	2367948.6	4+34.5	430.9
60035	566102.4	2367951.5	4+34.6	611.0
60099	566303.3	2367953.2	4+39.4	410.2
60032	566145.3	2367955.8	4+39.6	568.2
60100	566311.1	2367954.6	4+40.9	402.4
60106	566419.6	2367953.3	4+41.2	293.9
60097	566295.7	2367956.5	4+42.5	417.9
60098	566294.4	2367960.7	4+46.7	419.2
60105	566418.7	2367962.8	4+50.8	294.9
60036	566075.1	2367969.7	4+52.4	638.6
60034	566111.7	2367973.8	4+57.1	602.0
60103	566326.0	2367971.2	4+57.7	387.8
60059	566507.5	2367973.4	4+62.7	206.3
60033	566112.4	2367984.8	4+68.0	601.5
60116	566193.5	2367984.8	4+69.3	520.4
60044	566056.7	2367987.4	4+69.8	657.3
60104	566310.1	2367985.0	4+71.3	403.9
60041	566049.4	2367989.1	4+71.4	664.6
60043	566060.5	2367990.5	4+73.0	653.5
60042	566056.5	2367994.7	4+77.1	657.6
60040	566046.5	2367995.4	4+77.7	667.6
60115	566200.3	2367997.4	4+82.0	513.8
60039	566051.2	2368006.5	4+88.8	663.0
60037	566081.3	2368007.4	4+90.2	633.0
60045	566027.0	2368010.5	4+92.4	687.3
60113	566213.3	2368012.5	4+97.3	501.1
60112	566216.4	2368013.7	4+98.6	498.0
60038	566067.0	2368017.3	4+99.9	647.4
60111	566216.8	2368016.7	5+01.6	497.7
60114	566204.5	2368019.0	5+03.6	510.0
60110	566221.2	2368024.5	5+09.4	493.4
60109	566274.9	2368033.6	5+19.3	439.8
60117	566184.0	2368057.9	5+42.2	531.0
60046	566029.1	2368068.7	5+50.7	686.1
60118	566131.3	2368068.6	5+52.1	583.9
60047	566019.2	2368072.5	5+54.4	696.0
60119	566110.0	2368076.3	5+59.5	605.3
60048	565997.0	2368100.4	5+81.9	718.7
60120	566169.3	2368107.8	5+91.9	546.5
60121	566192.7	2368111.6	5+96.1	523.1
60122	566151.4	2368172.8	6+56.6	565.3
60123	566127.4	2368201.3	6+84.7	589.8
60124	566067.1	2368231.1	7+13.7	650.6
60126	566024.9	2368334.3	8+16.2	694.4
60125	566052.1	2368335.6	8+18.0	667.1
60127	566017.8	2368338.1	8+19.8	701.5

LEGEND

- GEOSEARCHES FLAG
- E ELECTRIC PEDESTAL

Figure 4 - Previously Identified Anomalies and Anomaly Cluster Areas (Red)

I HEREBY STATE THAT THIS MAP IS BASED ON AN ACTUAL FIELD SURVEY PREPARED BY ME. THE SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF. ALL DIMENSIONS GIVEN ARE EXPRESSED IN FEET AND DECIMAL PARTS THEREOF. BEARINGS ARE BASED ON GRID NORTH OF THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD 83 DATUM.

CHRISTOPHER J. DEMPSEY
PROFESSIONAL SURVEYOR NO. 6914
DATE OF SURVEY: MAY 11, 2011

DATE SIGNED:_____

STATE OF OHIO
CHRISTOPHER J. DEMPSEY
S-6914
REGISTERED
PROFESSIONAL SURVEYOR

2 WORKING DAYS
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50 0 50 100 150
SCALE: 1" = 50'

LOCATION SURVEY
FOR
GEOSEARCHES
OF
THE RAVENNA ARSENAL

JOB NO. 8002	HORZ. SCALE 1" = 50'	VERT. SCALE NONE	DRAWN BY MS	FIELD CREW MS-SB
LAST PLOT DATE May 16, 2011	DATE OF SURVEY MAY 11, 2011			CHECKED BY CJD

SHEET 1 OF 1

DEMPSEY / SURVEYING / COMPANY
www.dempseysurvey.com
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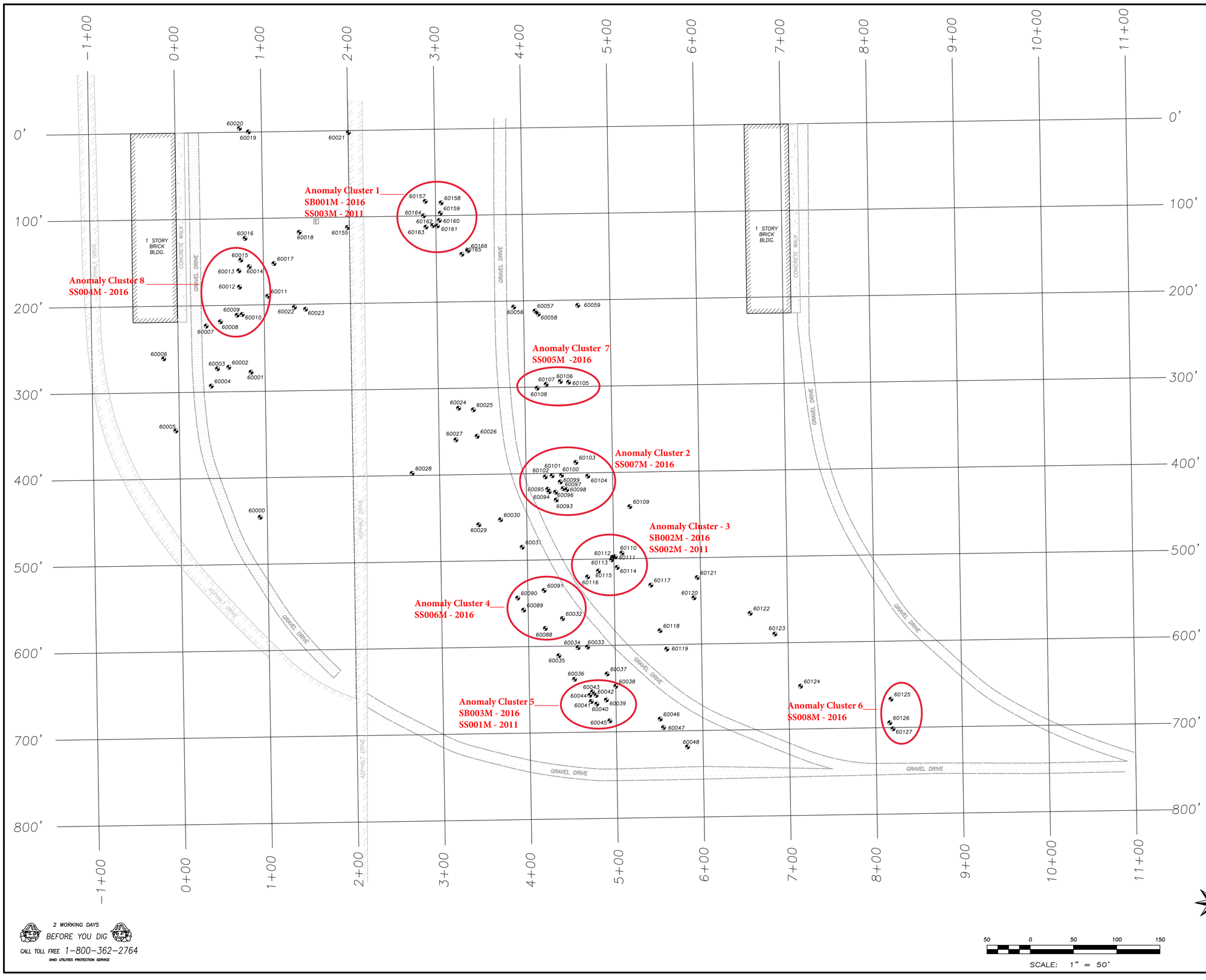
Drawing File: K:\8000-8099\8002\8002.dwg May 16, 2011 - 9:46am



Flag	Northing	Easting	Station	Offset
60005	566362.4	2367508.6	-0+4.2	344.3
60006	566445.7	2367494.6	-0+17.0	260.8
60007	566483.7	2367543.7	0+32.7	223.6
60004	566414.2	2367549.5	0+37.5	293.1
60003	566434.2	2367556.7	0+44.9	273.2
60008	566488.6	2367560.1	0+49.2	218.9
60002	566436.0	2367569.8	0+58.1	271.7
60009	566496.2	2367579.5	0+68.7	211.6
60013	566547.6	2367581.6	0+71.5	160.3
60012	566528.7	2367582.1	0+71.8	179.1
60015	566559.9	2367583.8	0+73.9	147.9
60010	566497.1	2367585.3	0+74.5	210.8
60020	566712.3	2367582.1	0+74.6	-4.44
60016	566585.1	2367588.6	0+79.1	122.9
60014	566552.3	2367593.6	0+83.6	155.7
60001	566430.3	2367595.6	0+83.7	277.7
60019	566708.3	2367592.6	0+85.0	-0.29
60000	566262.5	2367606.2	0+91.8	445.7
60011	566518.2	2367614.9	1+04.4	190.2
60017	566555.9	2367622.1	1+12.1	152.5
60022	566505.4	2367645.7	1+35.0	203.4
60018	566592.1	2367651.3	1+41.9	116.8
60023	566503.1	2367658.6	1+47.9	205.9
60155	566597.7	2367707.1	1+97.8	112.0
60021	566707.4	2367708.1	2+00.5	2.4
60028	566313.3	2367781.9	2+68.2	397.5
60164	566611.1	2367795.1	2+86.0	100.0
60157	566628.0	2367797.0	2+88.1	83.2
60163	566598.1	2367797.8	2+88.5	113.0
60162	566599.9	2367805.8	2+96.5	111.4
60161	566599.4	2367811.0	3+01.8	111.9
60160	566605.8	2367813.2	3+04.0	105.5
60159	566614.2	2367814.5	3+05.4	97.2
60158	566626.1	2367815.4	3+06.5	85.3
60027	566352.0	2367832.5	3+19.4	359.6
60024	566388.6	2367835.6	3+23.1	323.1
60165	566566.7	2367839.4	3+29.6	145.1
60166	566570.8	2367846.3	3+36.5	141.1
60025	566386.8	2367852.7	3+40.1	325.1
60026	566356.1	2367857.1	3+44.1	355.9
60029	566253.8	2367859.0	3+44.4	458.2
60030	566259.6	2367884.2	3+69.7	452.8
60090	566169.1	2367904.0	3+88.1	543.6
60056	566505.7	2367899.4	3+88.6	207.0
60031	566227.9	2367909.1	3+94.2	484.9
60089	566155.1	2367910.8	3+94.7	557.7
60057	566501.1	2367924.0	4+13.2	212.0
60108	566411.8	2367926.4	4+14.3	301.3
60058	566497.5	2367927.8	4+16.9	215.6
60091	566177.8	2367934.5	4+18.7	535.4

Flag	Northing	Easting	Station	Offset
60088	566133.8	2367935.9	4+19.5	579.4
60102	566309.2	2367935.9	4+22.1	404.0
60095	566294.9	2367938.7	4+24.8	418.3
60107	566416.2	2367936.9	4+24.8	297.0
60094	566291.9	2367940.2	4+26.2	421.4
60101	566310.5	2367943.7	4+30.0	402.8
60096	566291.5	2367947.8	4+33.8	421.9
60093	566282.5	2367948.6	4+34.5	430.9
60035	566102.4	2367951.5	4+34.6	611.0
60099	566303.3	2367953.2	4+39.4	410.2
60032	566145.3	2367955.8	4+39.6	568.2
60100	566311.1	2367954.6	4+40.9	402.4
60106	566419.6	2367953.3	4+41.2	293.9
60097	566295.7	2367956.5	4+42.5	417.9
60098	566294.4	2367960.7	4+46.7	419.2
60105	566418.7	2367962.8	4+50.8	294.9
60036	566075.1	2367969.7	4+52.4	638.6
60034	566111.7	2367973.8	4+57.1	602.0
60103	566326.0	2367971.2	4+57.7	387.8
60059	566507.5	2367973.4	4+62.7	206.3
60033	566112.4	2367984.8	4+68.0	601.5
60116	566193.5	2367984.8	4+69.3	520.4
60044	566056.7	2367987.4	4+69.8	657.3
60104	566310.1	2367985.0	4+71.3	403.9
60041	566049.4	2367989.1	4+71.4	664.6
60043	566060.5	2367990.5	4+73.0	653.5
60042	566056.5	2367994.7	4+77.1	657.6
60040	566046.5	2367995.4	4+77.7	667.6
60115	566200.3	2367997.4	4+82.0	513.8
60039	566051.2	2368006.5	4+88.8	663.0
60037	566081.3	2368007.4	4+90.2	633.0
60045	566027.0	2368010.5	4+92.4	687.3
60113	566213.3	2368012.5	4+97.3	501.1
60112	566216.4	2368013.7	4+98.6	498.0
60038	566067.0	2368017.3	4+99.9	647.4
60111	566216.8	2368016.7	5+01.6	497.7
60114	566204.5	2368019.0	5+03.6	510.0
60110	566221.2	2368024.5	5+09.4	493.4
60109	566274.9	2368033.6	5+19.3	439.8
60117	566184.0	2368057.9	5+42.2	531.0
60046	566029.1	2368068.7	5+50.7	686.1
60118	566131.3	2368068.6	5+52.1	583.9
60047	566019.2	2368072.5	5+54.4	696.0
60119	566110.0	2368076.3	5+59.5	605.3
60048	565997.0	2368100.4	5+81.9	718.7
60120	566169.3	2368107.8	5+91.9	546.5
60121	566192.7	2368111.6	5+96.1	523.1
60122	566151.4	2368172.8	6+56.6	565.3
60123	566127.4	2368201.3	6+84.7	589.8
60124	566067.1	2368231.1	7+13.7	650.6
60126	566024.9	2368334.3	8+16.2	694.4
60125	566052.1	2368335.6	8+18.0	667.1
60127	566017.8	2368338.1	8+19.8	701.5

LEGEND

GEOSEARCHES FLAG

E ELECTRIC PEDESTAL

SS = Surficial Soil Sample
SB = Subsurface Soil Sample

Figure 5 - CC RVAAP-80 Sample Locations

I HEREBY STATE THAT THIS MAP IS BASED ON AN ACTUAL FIELD SURVEY PREPARED BY ME. THE SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF. ALL DIMENSIONS GIVEN ARE EXPRESSED IN FEET AND DECIMAL PARTS THEREOF. BEARINGS ARE BASED ON GRID NORTH OF THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD 83 DATUM.

CHRISTOPHER J. DEMPSEY
PROFESSIONAL SURVEYOR NO. 6914
DATE OF SURVEY: MAY 11, 2011

DATE SIGNED:_____

STATE OF OHIO
CHRISTOPHER J. DEMPSEY
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LOCATION SURVEY
FOR
GEOSEARCHES
OF
THE RAVENNA ARSENAL

JOB NO.	HORZ. SCALE	VERT. SCALE	DRAWN BY	FIELD CREW
8002	1" = 50'	NONE	MS	MS-SB
LAST PLOT DATE	DATE OF SURVEY			CHECKED BY
May 16, 2011	MAY 11, 2011			CJD

SHEET 1 OF 1

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Tables

TABLE 1. Sample information and summary of analytes assessed in soil samples collected at CC RVAAP-80 Propellant Can Tops AOC.

Map Cluster	SAMPLE ID: CC RVAAP-80 Group 2 - Propellant Can Tops Area	Sample Date	VOCs 8260B	SVOCs 8270C	Pesticides 8081A	PCBs 8082	Explosives 8330	Nitrocellulose 353.2	Nitroguanidine 8330 Modified	Nitroglycerine 8330	Perchlorate 6860	TAL Metals 6010B	Mercury 7471A	Solids 160.3	Full TCLP, total Sulfide, Total Cyanide, pH & Flash Point	QA/QC SAMPLES[1]: Duplicate Sample[2]	Trip Blank	Equipment Rinse	MS/MSD
	PROPELLANT CAN TOPS AREA - WASTE CHARACTERIZATION SAMPLES																		
	PCTss-WC001-SO	2011/2016													1				
	PROPELLANT CAN TOPS AREA ISM SUBSURFACE SOIL SAMPLES																		
Cluster 1	PCTsb-001M-0001-SO	2016						1	1	1	1	1							
Cluster 3	PCTsb-002M-0001-SO	2016						1	1	1	1	1							
Cluster 5	PCTsb-003M-0001-SO	2016						1	1	1	1	1							1
	PROPELLANT CAN TOPS AREA ISM SURFACE SOIL SAMPLES																		
Cluster 3	PCTss-001M-0001-SO	2011						1	1	1	1					1			
Cluster 5	PCTss-002M-0001-SO[3]	2011	1	1	1	1	1	1	1	1	1	1	1	1					1
Cluster 1	PCTss-003M-0001-SO	2011						1	1	1	1								
Cluster 8	PCTss-004M-0001-SO	2016						1	1	1	1	1							
Cluster 7	PCTss-005M-0001-SO	2016						1	1	1	1	1				1			
Cluster 4	PCTss-006M-0001-SO[3]	2016	1	1	1	1	1	1	1	1	1	1	1	1			1	1	
Cluster 2	PCTss-007M-0001-SO	2016						1	1	1	1	1							
Cluster 6	PCTss-008M-0001-SO	2016						1	1	1	1	1							
			2	2	2	2	2	11	11	11	11	9	2	2	1	2	1	1	1

Notes:

[1] Field QC Samples - Duplicate samples were analyzed for the same parameters as the associated primary

[2] Duplicate Samples were numbered PCTss-001M-0001-DUP and PCTss-005M-0001-DUP

[3] Full Suite Samples were collected in clusters with the highest concentration of propellant cans and tops.

Analysis Name	Analysis Method			Preparation Method
Volatile Organic		EPA 8260B		EPA5035A
Semi-Volatile Organic		EPA 8270C		EPA 3540C
Pesticides		EPA 8081A		EPA 3540C
PCB		EPA 8082		EPA 3540C
Explosives		EPA 8330B		EPA 8330B_Sonc_10g
Nitrocellulose		EPA 353.2		NCEL_HYD & NCEL_Prep
Nitroguanidine		EPA 8330		EPA 8330_P_2g
Perchlorate		EPA 6860		EPA 6860_Prep
TAL Metals		EPA 6010B		EPA 3050B
Mercury		EPA 7471A		EPA7471A_Prep

TABLE 2. Propellant and metal results for ISM subsurface soil samples for CC RVAAP-80.

SUMMARY OF ISM SUBSURFACE SOIL SAMPLES	Subsurface Soil Background Criteria mg/kg	FWCUGs for Resident Farmer Adult HI = 0.1 (mg/kg)	FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg	FWCUGs for Resident Farmer Child HI = 0.1 (mg/kg)	FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg	Residential Regional Screening Level (RSL) mg/kg	Subsurface Soil Background Criteria mg/kg	Anomaly Cluster 1 PCTSb-001M-0001-SO		Anomaly Cluster 3 PCTSb-002M-0001-SO		Anomaly Cluster 5 PCTSb-003M-0001-SO		Detection Range Values/*Limits for Non-detects* (min-max) in mg/kg		Maximum Concentration greater than Site Background Criteria	Maximum Concentration greater than Residential Criteria (TCR at 10-6 and HQ = 0.1
Sample Date								4/11/2016		4/12/2016		4/12/2016		Min	Max		
Propellants 353.2, 8330B mg/kg																	
Nitrocellulose	--	--	--	--	--	190000000	--	*1.8*	*U*	*1.8*	*U*	*1.8*	*U*	*1.80*	*1.80*	NA	NA
Nitroglycerine	--	--	81.6	--	52.5		--	*0.25*	*U*	*0.25*	*U*	*0.25*	*U*	*0.25*	*0.25*	NA	NA
Nitroguanidine	--	--	--	--	--	6300	--	*0.04*	*U*	*0.041*	*U*	*0.04*	*U*	*0.04*	*0.041*	NA	NA
METALS 6010C mg/kg																	
Aluminum	19500	52923	--	7380	--		19500	6300		11000		8100	J	6300	11000	No	
Antimony	0.96	13.6	--	2.82	--		0.96	*2*	*U*	*2*	*U*	*2*	*R*	*2*	*2*	Yes	No
Arsenic	19.8	8.21	4.25	2.02	0.54		19.8	2.7	J	15		11		2.7	15.0	No	NA
Barium	124.0	8966	--	1412.9	--		124.0	15		47		57		15	57	No	NA
Beryllium	0.88	--	--	--	--	160	0.88	0.22	J	0.5		0.37		0.22	0.50	No	NA
Cadmium	0	22.3	1249.1	6.41	2676.7		0	0.043	J	*0.099*	*U*	0.081	J	0.043	0.099	Yes	No
Calcium (essential nutrient)	35500	--	--	--	--	--(n)	35500	390		610		660		390	660	No	NA
Chromium	27.2	90.4	187	19.9	4015		27.2	6.9		14		10		6.9	14.0	No	NA
Cobalt	23.2	8198	8030	131	1721		23.2	3.5		8.9		6.6		3.5	8.9	No	NA
Copper	32.3	2714	--	311	--		32.3	9.4		19		13		9.4	19.0	No	NA
Iron	35200	19010	--	2313	--		35200	8100		22000		17000	J	8100	22000	No	NA
Lead	19.1	400	--	400	--		19.1	7.8		15		12		7.8	15.0	No	NA
Magnesium (essential nutrient)	8790	--	--	--	--	--(n)	8790	1300		2300		1800		1300.0	2300.0	No	NA
Manganese	3030	1482	--	293	--		3030	56		330		490	J	56.0	490.0	No	NA
Nickel	60.7	1346	--	155	--	--	60.7	9.5		18		15		9.5	18.0	No	NA
Potassium (essential nutrient)	--	--	--	--	--	--(n)	--	480		910		630		480.0	910.0	No	NA
Selenium	1.5	--	--	--	--	390	1.5	*3*	*U*	*3*	*U*	*3*	*U J*	*3*	*3*	Yes	No
Silver	0	324	--	38.6	--		0	0.13	J	0.15	J	0.18	J	0.13	0.18	Yes	No
Sodium (essential nutrient)	--	--	--	--	--	--(n)	--	21	J	36	J	30	J	21	36	No	NA
Thallium	0.91	47.6	--	6.12	--	--	0.91	*1*	*U*	*0.99*	*U*	*1*	*U*	*0.99*	*1.00*	Yes	No
Vanadium	37.6	156	--	45	--		37.6	8.9		18		14		8.9	18.0	No	NA
Zinc	93.3	19659	--	2321	--	23000	93.3	36		55		49		36	55	No	NA
Mercury 7471B mg/kg																	
Mercury	0.044	16.5	--	2.27	--	--	0.044	0.015	R	0.02	R	0.023	R	0.015	0.023	No	NA
Perchlorate 6860 ug/kg																	
Perchlorate	--	--	--	--	--	--	--	0.00041	J	*0.39*	*U*	*0.39*	*U*	0.00041	0.390	NA	NA

J = Estimated concentration
mg/kg = milligrams per kilogram (parts per million)
(n) = essential nutrient
NA = Not applicable
R = Rejected result
U = Undetected at the limit of detection

SUMMARY OF ISM SUBSURFACE SOIL SAMPLES	Subsurface Soil Background Criteria mg/kg	FWCUGs for Resident Farmer Adult HI = 0.1 (mg/kg)	FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg	FWCUGs for Resident Farmer Child HI = 0.1 (mg/kg)	FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg	Residential Regional Screening Level (RSL) mg/kg	Subsurface Soil Background Criteria mg/kg	PCTsb-001M-0001-SO	PCTsb-002M-0001-SO	PCTsb-003M-0001-SO	Detection Range Values/*Lim for Non-detects* (min-max) mg/kg	Maximum Concentration gre than Site Background Criter	Maximum Concentration gre than Residential Criteria (TC at 10-6 and HQ = 0.1

ug/kg = micrograms per kilogram (parts per billion)
ug/L = micrograms per liter (parts per billion)
-- = Not Analyzed for this parameter
Green Shading indicates the maximum concetration detected exceeds the established backgoround value
Italics = Non detected concentrations
Yellow Shading indicates the maximum concetration detected > background but < risk-based screening critersi

TABLE 3. Explosives, cyanide, VOCs, SVOCs, pesticides, and PCB results for the ISM surface soil samples collected at CC RVAAP-80.
EXPLOSIVES, CYANIDE, VOCs, SVOCs, PESTICIDES, PCBs

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1* mg/kg	*FWCUGs for Resident Farmer Adult Risk = 10^{-6}* mg/kg	*FWCUGs for Resident Farmer Child HI = 0.1* mg/kg	*FWCUGs for Resident Farmer Child Risk = 10^{-6}* mg/kg	Residential Regional Screening Level (RSL) mg/kg	PCTss-002M-0001-SO		PCTss-002D-0001-SO		PCTss-006M-0001-SO	
Sample Date						5/26/2011		5/26/2011		4/13/2016	
EXPLOSIVES 8330B mg/kg											
1,3,5-Trinitrobenzene	1528	--	225	--		*0.24*	*U*	--		*0.05*	*U*
1,3-Dinitrobenzene	5.94	--	0.76	--		*0.24*	*U*	--		*0.05*	*U*
2,4,6-Trinitrotoluene	21.1	32.8	3.65	28.4		*0.24*	*U*	--		*0.05*	*U*
2,4-Dinitrotoluene	43.9	7.53	12.8	1.1		*0.24*	*U*	--		*0.05*	*U*
2,6-Dinitrotoluene	22.4	0.769	6.42	1.1		*0.24*	*U*	--		*0.05*	*U*
2-Amino-4,6-Dinitrotoluene	12.8	--	1.54	--		*0.24*	*U*	--		*0.05*	*U*
2-Nitrotoluene	594	6.03	76.5	3.88		*0.24*	*U*	--		*0.05*	*U*
3-Nitrotoluene	--	--	--	--	6.1	*0.24*	*U*	--		*0.05*	*U*
4-Amino-2,6-Dinitrotoluene	12.8	--	1.54	--		*0.24*	*U*	--		*0.05*	*U*
4-Nitrotoluene	594	81.6	76.5	52.5		*0.24*	*U*	--		*0.05*	*U*
HMX	1909	--	359	--		*0.24*	*U*	--		*0.05*	*U*
Nitrobenzene	--	--	--	--	51	*0.24*	*U*	--		*0.05*	*U*
PETN	--	--	--	--	130	*0.48*	*U*	--		*0.25*	*U*
RDX	163.2	11.5	22.7	8.03		*0.24*	*U*	--		*0.05*	*U*
Tetryl	--	--	--	--	160	*0.24*	*U*	--		*0.05*	*U*
Cyanide 9012 mg/kg											
Cyanide	--	--	--	--	--	0.19	J				
VOCS 8260B mg/kg										MG/KG	
1,1,1-Trichloroethane	--	--	--	--	8700	--		--		*0.0014*	*U*
1,1,2,2-Tetrachloroethane	--	--	--	--	0.56	--		--		*0.0028*	*U*
1,1,2-Trichloroethane	--	--	--	--	1.1	--		--		*0.0014*	*U*
1,1-Dichloroethane	--	--	--	--	240	--		0.005	U	*0.0014*	*U*
1,1-Dichloroethene	--	--	--	--	3.3	--		*0.005*	*U*	*0.0014*	*U*
1,2-Dichloroethane	--	--	--	--	0.43	--		--		*0.0028*	*U*
1,2-Dichloroethene (total)	--	--	--	--	150	--		*0.005*	*U*	*0.0028*	*U*
1,2-Dichloropropane	--	--	--	--	0.89	--		*0.005*	*U*	*0.0028*	*U*
2-Butanone	--	--	--	--	28000	--		*0.01*	*U*	*0.007*	*U*
2-Hexanone	--	--	--	--	210	--		*0.01*	*U*	*0.0028*	*U*
4-Methyl-2-pentanone	--	--	--	--	5300	--		*0.01*	*U*	*0.0028*	*U*
Acetone	--	--	--	--	61000	--		0.0053	J	0.0083	J

TABLE 3. Explosives, cyanide, VOCs, SVOCs, pesticides, and PCB results for the ISM surface soil samples collected at CC RVAAP-80.
EXPLOSIVES, CYANIDE, VOCs, SVOCs, PESTICIDES, PCBs

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1* mg/kg	*FWCUGs for Resident Farmer Adult Risk = 10^{-6}* mg/kg	*FWCUGs for Resident Farmer Child HI = 0.1* mg/kg	*FWCUGs for Resident Farmer Child Risk = 10^{-6}* mg/kg	Residential Regional Screening Level (RSL) mg/kg	PCTss-002M-0001-SO	PCTss-002D-0001-SO		PCTss-006M-0001-SO	
Benzene	--	--	--	--	1.1	--	*0.005*	*U*	*0.0014*	*U*
Bromodichloromethane	--	--	--	--	0.27	--	*0.005*	*U*	*0.0028*	*U*
Bromoform	--	--	--	--	61	--	*0.005*	*U*	*0.0014*	*U*
Bromomethane	--	--	--	--	6.8	--	*0.005*	*U*	*0.0028*	*U*
Carbon disulfide	--	--	--	--	820	--	*0.005*	*U*	*0.0014*	*U*
Carbon tetrachloride	--	--	--	--	0.61	--	*0.005*	*U*	*0.0028*	*U*
Chlorobenzene	--	--	--	--	290	--	*0.005*	*U*	*0.0014*	*U*
Chloroethane	--	--	--	--	15000	--	*0.005*	*U*	*0.0014*	*U*
Chloroform	--	--	--	--	0.29	--	*0.005*	*U*	*0.0014*	*U*
Chloromethane	--	--	--	--	110	--	*0.01*	*U*	*0.0014*	*U*
cis-1,3-Dichloropropene	--	--	--	--	1.7	--	*0.005*	*U*	*0.0028*	*U*
Dibromochloromethane	--	--	--	--	0.68	--	*0.005*	*U*	*0.0014*	*U*
Ethylbenzene	--	--	--	--	5.4	--	*0.005*	*U*	*0.0014*	*U*
Methylene Chloride	--	--	--	--	11	--	*0.005*	*U*	*0.0028*	*U*
Styrene	--	--	--	--	6300	--	*0.005*	*U*	*0.0014*	*U*
Tetrachloroethene	--	--	--	--	0.55	--	*0.005*	*U*	*0.0028*	*U*
Toluene	--	--	--	--	5000	--	*0.005*	*U*	*0.0028*	*U*
trans-1,3-Dichloropropene	--	--	--	--	1.7	--	*0.005*	*U*	*0.0028*	*U*
Trichloroethene	--	--	--	--	2.8	--	*0.005*	*U*	*0.0028*	*U*
Vinyl chloride	--	--	--	--	0.06	--	*0.005*	*U*	*0.0014*	*U*
Xylenes (Total)	--	--	--	--	630	--	*0.005*	*U*	*0.0014*	*U*
1,2,4-Trichlorobenzene	--	--	--	--	22	*2*	*U*	--	*0.16*	*U*
1,2-Dichlorobenzene	--	--	--	--	1900	*3.3*	*U*	--	*0.16*	*U*
1,3-Dichlorobenzene	--	--	--	--	--	*3.3*	*U*	--	*0.16*	*U*
1,4-Dichlorobenzene	--	--	--	--	2.4	*3.3*	*U*	--	*0.16*	*U*
2,2-oxybis (1-chloropropane)	--	--	--	--	--	*2*	*U*	--	--	
2,4,5-Trichlorophenol	--	--	--	--	6100	*2*	*U*	--	*0.16*	*U*
2,4,6-Trichlorophenol	--	--	--	--	44	*0.99*	*U*	--	*0.16*	*U*
2,4-Dichlorophenol	--	--	--	--	180	*3.3*	*U*	--	*0.16*	*U*
2,4-Dimethylphenol	--	--	--	--	1200	*0.99*	*U*	--	*0.33*	*U*
2,4-Dinitrophenol	--	--	--	--	120	*16*	*U*	--	*0.33*	*U*
2,4-Dinitrotoluene	43.9	0.753	12.8	1.1		*0.99*	*U*	--	*0.16*	*U*

TABLE 3. Explosives, cyanide, VOCs, SVOCs, pesticides, and PCB results for the ISM surface soil samples collected at CC RVAAP-80.
EXPLOSIVES, CYANIDE, VOCs, SVOCs, PESTICIDES, PCBs

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1* mg/kg	*FWCUGs for Resident Farmer Adult Risk = 10^{-6}* mg/kg	*FWCUGs for Resident Farmer Child HI = 0.1* mg/kg	*FWCUGs for Resident Farmer Child Risk = 10^{-6}* mg/kg	Residential Regional Screening Level (RSL) mg/kg	PCTss-002M-0001-SO		PCTss-002D-0001-SO		PCTss-006M-0001-SO	
2,6-Dinitrotoluene	--	--	--	--	61	*3.3*	*U*	--		*0.16*	*U*
2-Chloronaphthalene	--	--	--	--	6300	*0.99*	*U*	--		*0.16*	*U*
2-Chlorophenol	--	--	--	--	390	*0.99*	*U*	--		*0.16*	*U*
2-Methylnaphthalene	--	--	--	--	310	*2*	*U*	--		*0.16*	*U*
2-Methylphenol	--	--	--	--	3100	*2*	*U*	--		*0.16*	*U*
2-Nitroaniline	--	--	--	--	610	*16*	*U*	--		*0.33*	*U*
2-Nitrophenol	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
3,3'-Dichlorobenzidine	--	--	--	--	1.1	*5*	*U*	--		*0.16*	*U*
3-Nitroaniline	--	--	--	--	--	*16*	*U*	--		*0.1*	*U*
4,6-Dinitro-2-methylphenol	--	--	--	--	--	0.14	J	--		*0.33*	*U*
4-Bromophenyl phenyl ether	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
4-Chloro-3-methylphenol	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
4-Chloroaniline	--	--	--	--	2.4	*3.3*	*U*	--		*0.16*	*U*
4-Chlorophenyl phenyl ether	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
4-Methylphenol	--	--	--	--	310	*0.99*	*U*	--		*0.65*	*U*
4-Nitroaniline	--	--	--	--	24	*16*	*U*	--		*0.16*	*U*
4-Nitrophenol	--	--	--	--	--	*0.99*	*U*	--		*0.33*	*U*
Acenaphthene	--	--	--	--	3400	*0.99*	*U*	--		*0.16*	*U*
Acenaphthylene	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
Anthracene	--	--	--	--	17000	*0.99*	*U*	--		*0.16*	*U*
Benzo(a)anthracene	--	0.221	--	0.65		*0.99*	*U*	--		*0.16*	*U*
Benzo(a)pyrene	--	0.221	--	0.65		*0.99*	*U*	--		*0.16*	*U*
Benzo(b)fluoranthene	--	0.221	--	0.65		*0.99*	*U*	--		*0.16*	*U*
Benzo(g,h,i)perylene	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
Benzo(k)fluoranthene	--	2.21	--	6.5	0.15	*0.99*	*U*	--		*0.16*	*U*
Bis(2-chloroethoxy)methane	178	--	23	--		*0.99*	*U*	--		*0.16*	*U*
Bis(2-chloroethyl) ether	--	--	--	--	0.21	*0.99*	*U*	--		*0.16*	*U*
Bis(2-ethylhexyl) phthalate	--	--	--	--	35	*5*	*U*	--		*0.16*	*U*
Butyl benzyl phthalate	--	--	--	--	260	*0.99*	*U*	--		*0.16*	*U*
Carbazole	--	69.4	--	44.6	--	*0.99*	*U*	--		*0.16*	*U*
Chrysene	--	22.1	--	65		*0.99*	*U*	--		*0.16*	*U*
Dibenz(a,h)anthracene	--	0.221	--	0.065		*0.99*	*U*	--		*0.16*	*U*
Dibenzofuran	0.596	--	15.3	--		*0.99*	*U*	--		*0.16*	*U*

TABLE 3. Explosives, cyanide, VOCs, SVOCs, pesticides, and PCB results for the ISM surface soil samples collected at CC RVAAP-80.
EXPLOSIVES, CYANIDE, VOCs, SVOCs, PESTICIDES, PCBs

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg*	*FWCUGs for Resident Farmer Child HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg*	Residential Regional Screening Level (RSL) mg/kg	PCTss-002M-0001-SO		PCTss-002D-0001-SO		PCTss-006M-0001-SO	
Diethyl phthalate	--	--	--	--	49000	*0.99*	*U*	--		*0.16*	*U*
Dimethyl phthalate	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
Di-n-butyl phthalate	--	--	--	--	6100	*5*	*U*	--		*0.16*	*U*
Di-n-octyl phthalate	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
Fluoranthene	276	--	163	--		*0.99*	*U*	--		*0.16*	*U*
Fluorene	737	--	243	--		*0.99*	*U*	--		*0.16*	*U*
Hexachlorobenzene	--	--	--	--	0.3	*0.99*	*U*	--		*0.16*	*U*
Hexachlorobutadiene	--	--	--	--	6.2	*5*	*U*	--		*0.16*	*U*
Hexachlorocyclopentadiene	--	--	--	--	370	*16*	*U*	--		*0.32*	*U*
Hexachloroethane	--	--	--	--	35	*3.3*	*U*	--		*0.16*	*U*
Indeno(1,2,3-cd)pyrene	--	0.221	--	0.65		*0.99*	*U*	--		*0.16*	*U*
Isophorone	--	--	--	--	510	*5*	*U*	--		*0.16*	*U*
Naphthalene	4.93	--	121.5	--		*0.99*	*U*	--		*0.16*	*U*
Nitrobenzene	--	--	--	--	4.8	*0.99*	*U*	--		*0.16*	*U*
N-Nitroso-di-n-propylamine	--	0.127	--	0.12		*0.99*	*U*	--		*0.16*	*U*
n-Nitrosodiphenylamine	--	--	--	--	99	*3.3*	*U*	--		*0.16*	*U*
Pentachlorophenol	3269	21.2	151	4.91		*16*	*U*	--		*0.16*	*U*
Phenanthrene	--	--	--	--	--	*0.99*	*U*	--		*0.16*	*U*
Phenol	--	--	--	--	18000	*0.99*	*U*	--		*0.16*	*U*
Pyrene	207.4	--	122	--		*0.99*	*U*	--		*0.16*	*U*
PESTICIDES 8081B mg/kg											
4,4'-DDD	--	--	--	--	2.0	*0.0034*	*U*	--		*0.00049*	*U*
4,4'-DDE		4.08		2.63		0.00073	J	--		*0.00049*	*U*
4,4'-DDT	--	--	--	--	1.7	*0.0034*	*U*	--		*0.00099*	*U*
Aldrin	1.78	81.6	0.23	0.0525		*0.0017*	*U*	--		*0.00049*	*U*
alpha-BHC					0.077	*0.0017*	*U*	--		*0.00049*	*U*
alpha-Chlordane	--	--	--	--	--	*0.0017*	*U*	--		0.00047	J
beta-BHC		0.77		0.496		*0.0017*	*U*	--		*0.00099*	*U*
delta-BHC					--	*0.0017*	*U*	--		0.00024	J
Dieldrin	2.97	0.867	0.383	0.0558		*0.0034*	*U*	--		*0.00027*	*U*
Endosulfan I	--	--	--	--	370	*0.0017*	*U*	--		*0.00027*	*U J*
Endosulfan II	--	--	--	--	--	*0.0034*	*U*	--		*0.00027*	*U*
Endosulfan sulfate	--	--	--	--	--	*0.0034*	*U*	--		*0.00027*	*U*

TABLE 3. Explosives, cyanide, VOCs, SVOCs, pesticides, and PCB results for the ISM surface soil samples collected at CC RVAAP-80.
EXPLOSIVES, CYANIDE, VOCs, SVOCs, PESTICIDES, PCBs

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg*	*FWCUGs for Resident Farmer Child HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg*	Residential Regional Screening Level (RSL) mg/kg	PCTss-002M-0001-SO		PCTss-002D-0001-SO		PCTss-006M-0001-SO	
Endrin	1.77		1.12			*0.0034*	*U*	--		*0.00027*	*U*
Endrin aldehyde	--	--	--	--	--	*0.0034*	*U*	--		*0.00027*	*U*
Endrin ketone	--	--	--	--	--	*0.0034*	*U*	--		*0.00099*	*U*
gamma-BHC					0.52	*0.0017*	*U*	--		*0.00049*	*U*
gamma-Chlordane	--	--	--	--	1.6	*0.0017*	*U*	--		*0.00027*	*U*
Heptachlor	29.7	0.308	3.83	0.0198		*0.0017*	*U*	--		*0.00049*	*U*
Heptachlor epoxide	0.773	0.152	0.0995	0.981		*0.0017*	*U*	--		*0.00027*	*U*
Methoxychlor	--	--	--	--	310	*0.0017*	*U*	--		*0.003*	*U*
Toxaphene	--	--	--	--	0.44	*0.066*	*U*	--		*0.049*	*U*
PCBs 8082A mg/kg											
Aroclor-1016	1.22	0.203	0.419	0.349		*0.033*	*U*	--		*0.0099*	*U*
Aroclor-1221	--	--	--	--	0.14	*0.033*	*U*	--		*0.015*	*U*
Aroclor-1232	--	--	--	--	0.14	*0.033*	*U*	--		*0.02*	*U*
Aroclor-1242	--	--	--	--	0.22	*0.033*	*U*	--		*0.02*	*U*
Aroclor-1248	--	0.203	--	0.349		*0.033*	*U*	--		*0.015*	*U*
Aroclor-1254	0.348	0.203	--	0.349		*0.033*	*U*	--		*0.0099*	*U*
Aroclor-1260	--	0.203	--	0.349		*0.033*	*U*	--		*0.0099*	*U*

FWCUGs- Facility-wide Clean Up Goals, SAIC, March 2010
HI - Hazard Index
J = Estimated concentration
mg/kg = milligrams per kilogram (parts per million)
SVOCs - Semivolatile organic compounds
U = Undetected at the limit of detection
VOCs - Volatile organic compounds
-- = Not Analyzed for this parameter
Italics = Non detected concentrations

TABLE 4. Propellant and metal results for the ISM surface soil samples collected at CC RVAAP-80.

							Anomaly Cluster 1		Anomaly Cluster 3		Anomaly Cluster 5									
SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg*	*FWCUGs for Resident Farmer Child HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg*	Residential Regional Screening Level (RSL) mg/kg	Surface Soil Background Criteria mg/kg	PCTss-003M-0001-SO		PCTss-002M-0001-SO		PCTss-001M-001-SO		PCTss-001M-001-SO DUP		PCTss-004M-0001-SO		PCTss-005M-0001-SO		PCTss-005M-0001-DS DUPLICATE	
Sample Date							5/26/2011		5/26/2011		5/26/2011		5/26/2011		4/13/2016		4/13/2016		4/13/2016	
Propellants mg/kg																				
Nitrocellulose	--	--	--	--	190000000	--	*5*	*U*	*5*	*U*	1.1	J	0.82	J	0.96	J	*1.8*	*U*	*1.8*	*U*
Nitroglycerine	--	81.6	--	52.5		--	*0.5*	*U*	*0.48*	*U*	*0.48*	*U*	*0.49*	*U*	*0.25*	*U*	*0.26*	*U*	*0.25*	*U*
Nitroguanidine	--	--	--	--	6300	--	0.17	J	*0.25*	*U*	0.063	J	0.12	J	*0.039*	*U*	*0.04*	*U*	*0.4*	*U*
METALS 6010B mg/kg																				
Aluminum	52923	--	7380	--		17700	--		10600		--		--		11000		7800	D	7900	
Antimony	13.6	--	2.82	--		0.96	--		*1.6*	*U*	--		--		*2*	*U*	*2*	*U*	*2*	*U*
Arsenic	8.21	4.25	2.02	0.54		15.4	--		8.4		--		--		9.3		7.4		7.6	
Barium	8966	--	1412.9	--		88.4	--		81.7		--		--		59		49		49	
Beryllium	--	--	--	--	160	0.88	--		0.45		--		--		0.51		0.31		0.3	
Cadmium	22.3	1249.1	6.41	2676.7		0.0	--		0.13	J	--		--		0.21	J	0.11		0.1	J
Calcium (essential nutrient)	--	--	--	--	--(n)	15800	--		954		--		--		2700		280		340	
Chromium	90.4	187	19.9	4015		17.4	--		2.42		--		--		18		11		10	
Cobalt	8198	8030	131	1721		10.4	--		7.7		--		--		9.2		6		5.9	
Copper	2714	--	311	--		17.7	--		12.1		--		--		17		9.8		9.4	
Iron	19010	--	2313	--		23100	--		17600		--		--		21000		13000		13000	
Lead	400	--	400	--		26.1	--		34.1		--		--		62		27		27	
Magnesium (essential nutrient)	--	--	--	--	--(n)	3030	--		1770		--		--		2800		1300		1300	
Manganese	1482	--	293	--		1450	--		833		--		--		420		460		440	
Nickel	1346	--	155	--	--	21.1	--		18.5		--		--		21		11		11	
Potassium (essential nutrient)	--	--	--	--	--(n)	--	--		654		--		--		1100		470		470	
Selenium	--	--	--	--	390	1.4	--		*2.1*	*U*	--		--		*3*	*U*	*3*	*U*	*3*	*U*
Silver	324	--	38.6	--		0	--		*0.53*	*U*	--		--		0.19	J	0.25	J	0.31	J
Sodium (essential nutrient)	--	--	--	--	--(n)	--	--		35.6	J	--		--		36	J	21	J	21	J
Thallium	47.6	--	6.12	--	--	0	--		*2.1*	*U*	--		--		*1*	*U*	*0.99*	*U*	*0.99*	U
Vanadium	156	--	45	--		31.1	--		24.4		--		--		17		13		13	
Zinc	19659	--	2321	--	23000	61.8	--		62.4		--		--		**78**		50		50	

TABLE 4. Propellant and metal results for the ISM surface soil samples collected at CC RVAAP-80.

							Anomaly Cluster 1		Anomaly Cluster 3		Anomaly Cluster 5									
SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg*	*FWCUGs for Resident Farmer Child HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg*	Residential Regional Screening Level (RSL) mg/kg	Surface Soil Background Criteria mg/kg	PCTss-003M-0001-SO		PCTss-002M-0001-SO		PCTss-001M-001-SO		PCTss-001M-001-SO DUP		PCTss-004M-0001-SO		PCTss-005M-0001-SO		PCTss-005M-0001-DS DUPLICATE	
Sample Date							5/26/2011		5/26/2011		5/26/2011		5/26/2011		4/13/2016		4/13/2016		4/13/2016	
Mercury 7471A mg/kg																				
Mercury	16.5	--	2.27	--	--	0.036	--		0.049						0.038	J-	0.035	J-	0.038	J-
Perchlorate 6860 ug/kg																				
Perchlorate	--	--	--	--	--	0.00	0.000093	J	*0.5*	*U*	0.000093	J	0.00011	J	*0.4*	*U*	*0.41*	*U*	*0.41*	*U*

J = Estimated concentration
J- = Estimated concentration, biased low
mg/kg = milligrams per kilogram (parts per million)
U = Undetected at the limit of detection
-- = Not Analyzed for this parameter
Grey highlights indicate the applicable screening level.
Italics = Non detected concentrations
Blue Highlight = > the applicable screening level.
Bold = > Background

TABLE 4. Propellant and metal results for the ISM surface soil samples collected at CC RVAAP-80.

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg*	*FWCUGs for Resident Farmer Child HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg*	Residential Regional Screening Level (RSL) mg/kg	Surface Soil Background Criteria mg/kg	PCTss-006M-0001-SO		PCTss-007M-0001-SO		PCTss-008M-0001-SO	
Sample Date							4/13/2016		4/13/2016		4/13/2016	
Propellants mg/kg												
Nitrocellulose	--	--	--	--	190000000	--	0.84	J	*1.8*	*U*	*1.8*	*U*
Nitroglycerine	--	81.6	--	52.5		--	*0.25*	*U*	*0.25*	*U*	*0.25*	*U*
Nitroguanidine	--	--	--	--	6300	--	*0.041*	*U*	*0.039*	*U*	*0.041*	*U*
METALS 6010B mg/kg												
Aluminum	52923	--	7380	--		17700	9700	J	9100		7900	
Antimony	13.6	--	2.82	--		0.96	*2*	*U*	*2*	*U*	*2*	*U*
Arsenic	8.21	4.25	2.02	0.54		15.4	8.4		7		6.9	
Barium	8966	--	1412.9	--		88.4	70		65		57	
Beryllium	--	--	--	--	160	0.88	0.43		0.37		0.31	
Cadmium	22.3	1249.1	6.41	2676.7		0.0	0.23	J	0.13	J	0.15	J
Calcium (essential nutrient)	--	--	--	--	--(n)	15800	900		630		480	
Chromium	90.4	187	19.9	4015		17.4	12		13		9.1	
Cobalt	8198	8030	131	1721		10.4	6.7		6.9		5.3	
Copper	2714	--	311	--		17.7	10		11		8.6	
Iron	19010	--	2313	--		23100	15000	J	15000		13000	
Lead	400	--	400	--		26.1	28		41		14	
Magnesium (essential nutrient)	--	--	--	--	--(n)	3030	1600		1600		1300	
Manganese	1482	--	293	--		1450	730	J	570		500	
Nickel	1346	--	155	--	--	21.1	13		15		12	
Potassium (essential nutrient)	--	--	--	--	--(n)	--	600		570		510	
Selenium	--	--	--	--	390	1.4	*2.9*	*U*	*3.1*	*U*	*3*	*U*
Silver	324	--	38.6	--		0	*0.2*	*U*	0.29	J	0.2	J
Sodium (essential nutrient)	--	--	--	--	--(n)	--	41	J	22	J	22	J
Thallium	47.6	--	6.12	--	--	0	*0.98*	*U*	*1*	*U*	*1*	*U*
Vanadium	156	--	45	--		31.1	--		15		14	
Zinc	19659	--	2321	--	23000	61.8	**64**		60		51	

TABLE 4. Propellant and metal results for the ISM surface soil samples collected at CC RVAAP-80.

SUMMARY OF ISM SURFACE SOIL SAMPLES	*FWCUGs for Resident Farmer Adult HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Adult Risk = 10^{-6} mg/kg*	*FWCUGs for Resident Farmer Child HI = 0.1 mg/kg*	*FWCUGs for Resident Farmer Child Risk = 10^{-6} mg/kg*	Residential Regional Screening Level (RSL) mg/kg	Surface Soil Background Criteria mg/kg	PCTss-006M-0001-SO		PCTss-007M-0001-SO		PCTss-008M-0001-SO	
Sample Date							4/13/2016		4/13/2016		4/13/2016	
Mercury 7471A mg/kg												
Mercury	16.5	--	2.27	--	--	0.036	0.045		0.039	J-	0.04	J-
Perchlorate 6860 ug/kg												
Perchlorate	--	--	--	--	--	0.00	*0.41*	*U*	*0.39*	*U*	*0.41*	*U*

J = Estimated concentration
J- = Estimated concentration, biased low
mg/kg = milligrams per kilogram (parts per million)
U = Undetected at the limit of detection
-- = Not Analyzed for this parameter
Grey highlights indicate the applicable screening level.
Italics = Non detected concentrations
Blue Highlight = > the applicable screening level.
Bold = > Background

APPENDIX A: DAILY REPORTS, SAMPLING LOGS & PHOTO DOCUMENTATION

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS	Monday, March 28, 2016	1
			Page 1

CONTRACTOR:	NAME OF SUXOS
PIKA International Inc., 12723 Capricorn Dr, Stafford TX 77477 Tel: (281) 340-5525 Fax: (281) 340-5533	Cameron Wenzel

WEATHER: 15 mph winds and occaisional rain

TEMPERATURE Low: 42 High: 49

WEATHER EFFECTS: Periodic work breaks required to warm up

PRIME CONTRACTOR/SUBCONTRACTOR WORKFORCE

NAME	POSITION	EMPLOYER	HOURS 0%	HOURS 4%	HOURS 8%	SUMMARY OF WORK PERFORMED
Cameron Wenzel	SUXOS	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Grady Bendel	UXOSOQC	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Kyle Toporek	UXO Tech 3	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Josh Starkey	UXO Tech 2	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Rick Callahan	Proj Manager	PIKA	10.0	0.0	0.0	Field Support
Total			14.0	0.0	36.0	

Work Exposure

TOTAL WORK HOURS ON JOB SITE THIS DATE	50.0	Break down of hours	14.0	0.0	36.0	TOTAL EXPOSURE HOURS ON JOB SITE THIS DATE	36.0
TOTAL WORK HOURS FROM START OF PROJECT	50.0					TOTAL EXPOSURE WORK HOURS FROM START OF PROJECT	36.0

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS	Monday, March 28, 2016	1
			Page 2

SAFETY TOPICS COVERED

* Slips, Trips, and Falls
* Recovery and Inspection
* Hand Injuries and Protection
*

DETAILED DESCRIPTION OF PROJECT ACTIVITIES:

* 44 Anomalies Reacquired, Propellant can and Lids recovered.
* All of the items were determined to be propellant can packaging or scrap metal and not MPPEH. All Items confirmed MDAS and consolidated for recycling.
* Limited non-propellant can scrap metal was co-located and collected. It will be recycled along with the propellant can items.
*
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*

PROJECT PERFORMANCE METRICS:

	DESCRIPTION	Total Anomalies to Reacquire	TODAYS TOTAL	CUMULATIVE TOTAL
*	**Number of Anonamlies**	**103.00**	**44**	**44**
*	**Number of Items Recovered**		**205**	**205**
*	**Number of Items determined to be MPPEH**		**0**	**0**
*	**Number of Items Confirmed MDAS**		**205**	**205**

DAILY SAFETY INSPECTION RESULTS:

* Lost Workday Accidents:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Lost Workdays:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Property Damage Accidents Exceeding $2,000.00:					This Week:	0	To Date:	0

PLANNED ACTIVITIES FOR REMAINDER OF WEEK

Continue scope - no deviations anticipated.

VISITORS

Kevin Sedlak OHARNG 1045 am

REMARKS (Include directions received from client's representative, visitors, compliance notices received; pertinent information)

	3/28/16		3/28/16
UXOSO/QC Grady Bendel	Date	SUXOS Cameron Wenzel	Date

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS	Tuesday, March 29, 2016	2
			Page 1

CONTRACTOR:	NAME OF SUXOS
PIKA International Inc., 12723 Capricorn Dr, Stafford TX 77477 Tel: (281) 340-5525 Fax: (281) 340-5533	Cameron Wenzel

WEATHER: Sunny and clear | TEMPERATURE Low: 32 High: 44

WEATHER EFFECTS: None

PRIME CONTRACTOR/SUBCONTRACTOR WORKFORCE

NAME	POSITION	EMPLOYER	HOURS 0%	HOURS 4%	HOURS 8%	SUMMARY OF WORK PERFORMED
Cameron Wenzel	SUXOS	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Grady Bendel	UXOSOQC	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Kyle Toporek	UXO Tech 3	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Josh Starkey	UXO Tech 2	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Rick Callahan	Proj Manager	PIKA	10.0	0.0	0.0	Field Support
Total			14.0	0.0	36.0	

Work Exposure

TOTAL WORK HOURS ON JOB SITE THIS DATE	50.0	Break down of hours	14.0	0.0	36.0	TOTAL EXPOSURE HOURS ON JOB SITE THIS DATE	36.0
TOTAL WORK HOURS FROM START OF PROJECT	100.0					TOTAL EXPOSURE WORK HOURS FROM START OF PROJECT	72.0

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS	Tuesday, March 29, 2016	2
			Page 2

SAFETY TOPICS COVERED

* Slips, Trips, and Falls
* Recovery and Inspection
* Hand Injuries and Protection
*

DETAILED DESCRIPTION OF PROJECT ACTIVITIES:

* 56 Anomalies Reacquired, Propellant can and Lids recovered.
* All of the items were determined to be propellant can packaging or scrap metal and not MPPEH. All Items confirmed MDAS and consolidated for recycling.
* Limited non-propellant can scrap metal was co-located and collected. It will be recycled along with the propellant can items.
*
*
*
*
*
*

PROJECT PERFORMANCE METRICS:

	DESCRIPTION	Total Anomalies to Reacquire	TODAYS TOTAL	CUMULATIVE TOTAL
*	**Number of Anonamlies**	**103.00**	**56**	**100**
*	**Number of Items Recovered**		**367**	**572**
*	**Number of Items determined to be MPPEH**		**0**	**0**
*	**Number of Items Confirmed MDAS**		**367**	**572**

DAILY SAFETY INSPECTION RESULTS:

* Lost Workday Accidents:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Lost Workdays:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Property Damage Accidents Exceeding $2,000.00:					This Week:	0	To Date:	0

PLANNED ACTIVITIES FOR REMAINDER OF WEEK

Continue scope - no deviations anticipated.

VISITORS

Kevin Sedlak and Katie Tait - OHARNG 1030

Gary Brunswick - Vista 1530

REMARKS (Include directions received from client's representative, visitors, compliance notices received; pertinent information)

3/29/16		3/29/16	
UXOSO/QC Grady Bendel	Date	SUXOS Cameron Wenzel	Date

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS	Wednesday, March 30, 2016	3
			Page 1

CONTRACTOR:	NAME OF SUXOS
PIKA International Inc., 12723 Capricorn Dr, Stafford TX 77477 Tel: (281) 340-5525 Fax: (281) 340-5533	Cameron Wenzel

WEATHER: Sunny and clear

TEMPERATURE Low: 23 High: 58

WEATHER EFFECTS: None

PRIME CONTRACTOR/SUBCONTRACTOR WORKFORCE

NAME	POSITION	EMPLOYER	HOURS			SUMMARY OF WORK PERFORMED
			0%	4%	8%	
Cameron Wenzel	SUXOS	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Grady Bendel	UXOSOQC	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Kyle Toporek	UXO Tech 3	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Josh Starkey	UXO Tech 2	PIKA	1.0	0.0	9.0	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS
Rick Callahan	Proj Manager	PIKA	10.0	0.0	0.0	Field Support
Total			14.0	0.0	36.0	

Work Exposure

TOTAL WORK HOURS ON JOB SITE THIS DATE	50.0	Break down of hours	14.0	0.0	36.0	TOTAL EXPOSURE HOURS ON JOB SITE THIS DATE	36.0
TOTAL WORK HOURS FROM START OF PROJECT	150.0					TOTAL EXPOSURE WORK HOURS FROM START OF PROJECT	108.0

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Anomaly Re-Acquire/Propellant Can and Lid pickup and Certification as MDAS	Wednesday, March 30, 2016	3
			Page 2

SAFETY TOPICS COVERED

* Slips, Trips, and Falls
* Recovery and Inspection
* Hand Injuries and Protection
*

DETAILED DESCRIPTION OF PROJECT ACTIVITIES:

* 3 Anomalies Reacquired, Propellant can and Lids recovered.
* All of the items were determined to be propellant can packaging or scrap metal and not MPPEH. All Items confirmed MDAS and consolidated for recycling.
* Limited non-propellant can scrap metal was co-located and collected. It will be recycled along with the propellant can items.
* 1348 Forms prepared and Scrap (MDAS) transported to the following:
* Falls Recycling LLC, 1536A 1st St., Newton Falls, OH 44444 for recycling.
*
*
*
*

PROJECT PERFORMANCE METRICS:

	DESCRIPTION	Total Anomalies to Reacquire	TODAYS TOTAL	CUMULATIVE TOTAL
*	**Number of Anonamlies**	**103.00**	**3**	**103**
*	**Number of Items Recovered**		**8**	**580**
*	**Number of Items determined to be MPPEH**		**0**	**0**
*	**Number of Items Confirmed MDAS**		**8**	**580**

DAILY SAFETY INSPECTION RESULTS:

* Lost Workday Accidents:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Lost Workdays:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Property Damage Accidents Exceeding $2,000.00:					This Week:	0	To Date:	0

PLANNED ACTIVITIES FOR REMAINDER OF WEEK

Task complete

VISITORS

Greg Moore - OHARNG 1015

REMARKS (Include directions received from client's representative, visitors, compliance notices received; pertinent information)

	3/30/16		3/30/16
UXOSO/QC Grady Bendel	Date	SUXOS Cameron Wenzel	Date

Anomaly Reacquisition, MPPEH Recovery and Inspection

Photo Log

Magnetometer Assisted Anomaly Reacquisition

Anomaly Recovery

Propellant cans recovered at a single anomaly in Cluster 1

Propellant tops recovered from a single anomaly in Cluster 1

Anomaly Reacquisition, MPPEH Recovery and Inspection

Photo Log (continued)

Example of comingled propellant tops and metallic debris

Propellant can top and rail road spike

Typical Propellant Can and Top

A cache of nails at relocated anomaly

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG

GENERAL PROJECT AND SITE INFORMATION

Date: 03/28/2016	Instructor(s): Grady Bendel	Time: 0700	Log No.: RAV-001

Site Name & Location: Compliance Restoration Site CC RVAAP-80, Former Ravenna Army Ammunition Plant, Portage & Trumble Counties Ohio

Contract No.:	Contract No.: W912QR-12-F-0212
Site Manager or SUXOS: Cameron Wenzel	SSHO: Grady (Bill) Bendel

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Sampling and Removal

Applicable CTHA/AHA's Reviewed for Today's Task: Site Specific Safety Training, Slip Trips and Fall

Anticipated Weather Conditions for the Day: Windy with rain showers. High 51F. Winds W at 20 to 30 mph. Chance of rain 50%.

Safety Concerns: Slip, trips and falls. PPE and Overhead Hazards,

Permits Required: ☒ Safe Work Permit ☐ Excavation Permit

Heavy Equipment to be Used Today: N/A

Site Control and Buddy Procedures: Visitor Control Log and Buddy System

Subcontractors Working On-site Today and Their Tasks:

Emergency Procedures: Non-Essential personnel on Site, Site communications

Assembly Locations: Work Trailer

Scheduled Deliveries for Today: None

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Cameron Wenzel		PIKA
Grady (Bill) Bendel		PIKA
Richard (Top) Toporek		PIKA
Joshua Starkey		PIKA
Rick Callahan		PIKA

I certify that the personnel listed on this roster have received the safety and health training described above.

Site Safety and Health Officer

Site Manager

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG

GENERAL PROJECT AND SITE INFORMATION			
Date: 03/29/2016	Instructor(s): Grady Bendel	Time: 0700	Log No.:RAV-002
Site Name & Location: Compliance Restoration Site CC RVAAP-80, Former Ravenna Army Ammunition Plant, Portage & Trumble Counties Ohio			
Contract No.:		Contract No.: W912QR-12-F-0212	
Site Manager or SUXOS: Cameron Wenzel		SSHO: Grady (Bill) Bendel	

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Sampling and Removal

Applicable CTHA/AHA's Reviewed for Today's Task: Slip Trips and Fall, Awareness of thorn and thistle bushes for cuts and punctures, Overhead fall hazards.

Anticipated Weather Conditions for the Day: Some clouds this morning will give way to generally sunny skies for the afternoon. High 48F. Winds NNW at 10 to 15 mph.

Safety Concerns: Slip, trips and falls. PPE and Overhead Hazards,

Permits Required: ☒ Safe Work Permit ☐ Excavation Permit

Heavy Equipment to be Used Today: N/A

Site Control and Buddy Procedures: Visitor Control Log and Buddy System

Subcontractors Working On-site Today and Their Tasks:

Emergency Procedures: Non-Essential personnel on Site, Site communications

Assembly Locations: Work Trailer

Scheduled Deliveries for Today: None

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Cameron Wenzel		PIKA
Grady (Bill) Bendel	Grady Bendel	PIKA
Richard (Top) Toporek		PIKA
Joshua Starkey		PIKA
Rick Callahan		PIKA

I certify that the personnel listed on this roster have received the safety and health training described above.

Grady Bendel — Site Safety and Health Officer

Site Manager

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG

GENERAL PROJECT AND SITE INFORMATION

Date: 03/30/2016	Instructor(s): Grady Bendel	Time: 0700	Log No.:RAV-003

Site Name & Location: Compliance Restoration Site CC RVAAP-80, Former Ravenna Army Ammunition Plant, Portage & Trumble Counties Ohio

Contract No.:	Contract No.: W912QR-12-F-0212
Site Manager or SUXOS: Cameron Wenzel	SSHO: Grady (Bill) Bendel

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Sampling and Removal

Applicable CTHA/AHA's Reviewed for Today's Task: Slip Trips and Fall, Tick awareness, Poison Ivy

Anticipated Weather Conditions for the Day: Sunshine and clouds mixed. High 67F, Low 53. Winds S at 10 to 20 mph.

Safety Concerns: Slip, trips and falls. PPE and Overhead Hazards,

Permits Required: ☒ Safe Work Permit ☐ Excavation Permit

Heavy Equipment to be Used Today: N/A

Site Control and Buddy Procedures: Visitor Control Log and Buddy System

Subcontractors Working On-site Today and Their Tasks:

Emergency Procedures: Non-Essential personnel on Site, Site communications

Assembly Locations: Work Trailer

Scheduled Deliveries for Today: None

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Cameron Wenzel		PIKA
Grady (Bill) Bendel		PIKA
Richard (Top) Toporek		PIKA
Joshua Starkey		PIKA
Rick Callahan		PIKA

I certify that the personnel listed on this roster have received the safety and health training described above.

Site Safety and Health Officer

Site Manager

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG

GENERAL PROJECT AND SITE INFORMATION

Date: 03/31/2016	Instructor(s): Grady Bendel	Time: 0700	Log No.:RAV-004

Site Name & Location: Compliance Restoration Site CC RVAAP-80, Former Ravenna Army Ammunition Plant, Portage & Trumble Counties Ohio

Contract No.:	Contract No.: W912QR-12-F-0212
Site Manager or SUXOS: Cameron Wenzel	SSHO: Grady (Bill) Bendel

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Sampling and Removal

Applicable CTHA/AHA's Reviewed for Today's Task: Slip Trips and Fall, Machete Safety, Personnel Hydration

Anticipated Weather Conditions for the Day: Cloudy with periods of rain. Becoming windy late. Thunder possible. High 63F. Winds SSW at 20 to 30 mph. Chance of rain 100%.

Safety Concerns: Slip, trips and falls. PPE and Overhead Hazards,

Permits Required: ☒ Safe Work Permit ☐ Excavation Permit

Heavy Equipment to be Used Today: N/A

Site Control and Buddy Procedures: Visitor Control Log and Buddy System

Subcontractors Working On-site Today and Their Tasks:

Emergency Procedures: Non-Essential personnel on Site, Site communications

Assembly Locations: Work Trailer

Scheduled Deliveries for Today: None

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Cameron Wenzel		PIKA
Grady (Bill) Bendel		PIKA
Richard (Top) Toporek		PIKA
Joshua Starkey		PIKA
Rick Callahan		PIKA

I certify that the personnel listed on this roster have received the safety and health training described above.

Site Safety and Health Officer

Site Manager

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Surface and Subsurface ISM Sampling	Monday, April 11, 2016	1
			Page 1

CONTRACTOR:	NAME OF Team Leader
PIKA International Inc., 12723 Capricorn Dr, Stafford TX 77477 Tel: (281) 340-5525 Fax: (281) 340-5533	Richard Callahan

WEATHER: Rainy — TEMPERATURE Low: 32 High: 45

WEATHER EFFECTS: Limited

PRIME CONTRACTOR/SUBCONTRACTOR WORKFORCE

NAME	POSITION	EMPLOYER	HOURS 0%	HOURS 4%	HOURS 8%	SUMMARY OF WORK PERFORMED
Rick Callahan	Proj Manager	PIKA	8.0	0.0	0.0	Team Leader/Field Support for Sampling
Mel Lau	UXO Tech 2	PIKA	1.0	7.0	0.0	Ordnance Avoidance for sampling
Christine McNeill	Geologist	TPMC	8.0	0.0	0.0	Logging and Sample Collection
Joseph Henley	Driller	Fronz	1.0	0.0	0.0	Geoprobe Drilling
Rickie Shanks	Drillers helper	Fronz	10.0	0.0	0.0	Geoprobe Drilling
Total			28.0	7.0	0.0	

Work Exposure

TOTAL WORK HOURS ON JOB SITE THIS DATE	35.0	Break down of hours	28.0	7.0	0.0	TOTAL EXPOSURE HOURS ON JOB SITE THIS DATE	7.0
TOTAL WORK HOURS FROM START OF PROJECT	35.0					TOTAL EXPOSURE WORK HOURS FROM START OF PROJECT	7.0

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Surface and Subsurface ISM Sampling	Monday, April 11, 2016	1
			Page 2

SAFETY TOPICS COVERED

* Slips, Trips, and Falls
* Ordnance avoidance
* Hand Injuries and Protection from drilling and sampling
*

DETAILED DESCRIPTION OF PROJECT ACTIVITIES:

* Completed PCTsb-001M-0001-SO
*
*
*
*
*
*
*
*

PROJECT PERFORMANCE METRICS:

	DESCRIPTION	Total Number to Sample	TODAYS TOTAL	CUMULATIVE TOTAL
*	**Number of Geoprobe ISM**	**3**	**1**	**1**
*	**Number of Surface Soil ISM**	**5**	**0**	**0**

DAILY SAFETY INSPECTION RESULTS:

* Lost Workday Accidents:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Lost Workdays:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Property Damage Accidents Exceeding $2,000.00:					This Week:	0	To Date:	0

PLANNED ACTIVITIES FOR REMAINDER OF WEEK

Remainder of ISM SB and surface locations

VISITORS

None

REMARKS (Include directions received from client's representative, visitors, compliance notices received; pertinent information)

Richard C. Callahan 4/11/16

Team Leader Date

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Surface and Subsurface ISM Sampling	Tuesday, April 12, 2016	2
			Page 1

CONTRACTOR:	NAME OF Team Leader
PIKA International Inc., 12723 Capricorn Dr, Stafford TX 77477 Tel: (281) 340-5525 Fax: (281) 340-5533	Richard Callahan

WEATHER: Sunny and Clear — TEMPERATURE Low: 28 High: 47

WEATHER EFFECTS: NA

PRIME CONTRACTOR/SUBCONTRACTOR WORKFORCE

NAME	POSITION	EMPLOYER	HOURS 0%	HOURS 4%	HOURS 8%	SUMMARY OF WORK PERFORMED
Rick Callahan	Proj Manager	PIKA	8.0	0.0	0.0	Team Leader/Field Support for Sampling
Mel Lau	UXO Tech 2	PIKA	1.0	7.0	0.0	Ordnance Avoidance for sampling
Christine McNeill	Geologist	TPMC	8.0	0.0	0.0	Logging and Sample Collection
Joseph Henley	Driller	Fronz	1.0	0.0	0.0	Geoprobe Drilling
Rickie Shanks	Drillers helper	Fronz	10.0	0.0	0.0	Geoprobe Drilling
Total			28.0	7.0	0.0	

Work Exposure

TOTAL WORK HOURS ON JOB SITE THIS DATE	35.0	Break down of hours	28.0	7.0	0.0	TOTAL EXPOSURE HOURS ON JOB SITE THIS DATE	7.0
TOTAL WORK HOURS FROM START OF PROJECT	70.0					TOTAL EXPOSURE WORK HOURS FROM START OF PROJECT	14.0

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Surface and Subsurface ISM Sampling	Tuesday, April 12, 2016	2
			Page 2

SAFETY TOPICS COVERED

* Slips, Trips, and Falls
* Ordnance avoidance
* Hand Injuries and Protection from drilling and sampling
*

DETAILED DESCRIPTION OF PROJECT ACTIVITIES:

* Completed PCTsb-002M-0001-SO
* Completed PCTsb-003M-0001-SO and MS/MSD
*
*
*
*
*
*
*

PROJECT PERFORMANCE METRICS:

	DESCRIPTION	Total Number to Sample	TODAYS TOTAL	CUMULATIVE TOTAL
*	**Number of Geoprobe ISM**	**3**	**2**	**3**
*	**Number of Surface Soil ISM**	**5**	**0**	**0**

DAILY SAFETY INSPECTION RESULTS:

* Lost Workday Accidents:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Lost Workdays:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Property Damage Accidents Exceeding $2,000.00:					This Week:	0	To Date:	0

PLANNED ACTIVITIES FOR REMAINDER OF WEEK

Surface ISM Sample collection

VISITORS

Jay Trumble -Louisville COE

Kevin Sedlak and Katie Tait - OHARNG

REMARKS (Include directions received from client's representative, visitors, compliance notices received; pertinent information)

Richard C. Ebbler 4/12/16

Team Leader Date

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Surface and Subsurface ISM Sampling	Wednesday, April 13, 2016	3
			Page 1

CONTRACTOR:	NAME OF Team Leader
PIKA International Inc., 12723 Capricorn Dr, Stafford TX 77477 Tel: (281) 340-5525 Fax: (281) 340-5533	Richard Callahan

WEATHER: Sunny — TEMPERATURE Low: 35 High: 65

WEATHER EFFECTS: NA

PRIME CONTRACTOR/SUBCONTRACTOR WORKFORCE

NAME	POSITION	EMPLOYER	HOURS 0%	HOURS 4%	HOURS 8%	SUMMARY OF WORK PERFORMED
Rick Callahan	Proj Manager	PIKA	8.0	0.0	0.0	Team Leader/Field Support for Sampling
Mel Lau	UXO Tech 2	PIKA	1.0	7.0	0.0	Ordnance Avoidance for sampling
Christine McNeill	Geologist	TPMC	8.0	0.0	0.0	Logging and Sample Collection
Total			17.0	7.0	0.0	

Work Exposure

TOTAL WORK HOURS ON JOB SITE THIS DATE	24.0	Break down of hours	17.0	7.0	0.0	TOTAL EXPOSURE HOURS ON JOB SITE THIS DATE	7.0
TOTAL WORK HOURS FROM START OF PROJECT	94.0					TOTAL EXPOSURE WORK HOURS FROM START OF PROJECT	21.0

PIKA INTERNATIONAL, INC.

DAILY REPORT

CONTRACT/TO NUMBERS	TITLE AND LOCATION	DAY/DATE	REPORT NUMBER
W912-QR-12-F-0212	Surface and Subsurface ISM Sampling	Wednesday, April 13, 2016	3
			Page 2

SAFETY TOPICS COVERED

* Slips, Trips, and Falls
* Ordnance avoidance
* Hand Injuries and Protection from drilling and sampling
*

DETAILED DESCRIPTION OF PROJECT ACTIVITIES:

* Collected all 5 Surface ISM samples
* Collected IDW sample
* Shipped samples for Analysis
*
*
*
*
*
*

PROJECT PERFORMANCE METRICS:

	DESCRIPTION	Total Number to Sample	TODAYS TOTAL	CUMULATIVE TOTAL
*	**Number of Geoprobe ISM**	**3**	**0**	**3**
*	**Number of Surface Soil ISM**	**5**	**5**	**5**

DAILY SAFETY INSPECTION RESULTS:

* Lost Workday Accidents:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Lost Workdays:	Today:	0	This Week:	0	This Month:	0	To Date:	0
* Property Damage Accidents Exceeding $2,000.00:					This Week:	0	To Date:	0

PLANNED ACTIVITIES FOR REMAINDER OF WEEK

Demob of personnel and Port-o-Jons

VISITORS

None

REMARKS (Include directions received from client's representative, visitors, compliance notices received; pertinent information)

Richard C. Callahan 4/13/16

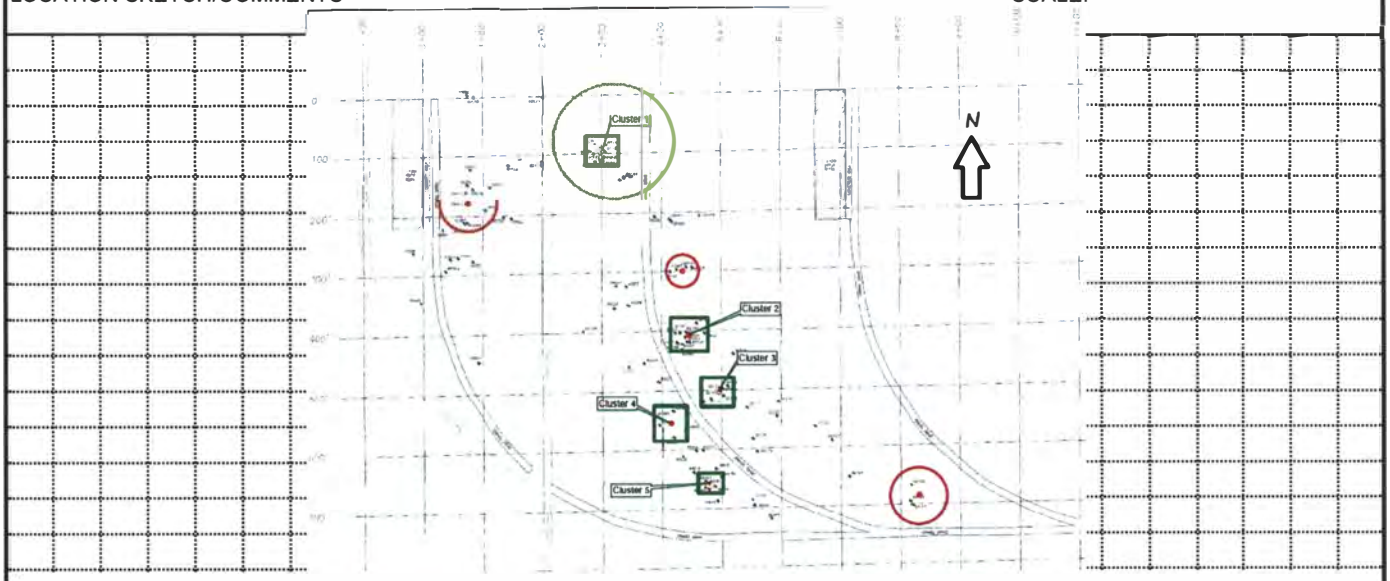
Team Leader Date

HTRW DRILLING LOG

1. COMPANY NAME	DISTRICT	HOLE NUMBER N/A
2. SUBCONTRACTOR		SHEET SHEETS OF
3. PROJECT	4. LOCATION	
5. NAME OF DRILLER	6. MANUFACTURER'S DESIGNATION OF DRILL	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	8. HOLE LOCATION	
	9. SURFACE ELEVATION N/A	
	10. DATE STARTED	11. DATE COMPLETED
12. OVERBURDEN THICKNESS N/A	15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18. GEOTECHNICAL SAMPLES N/A	DISTURBED N/A	UNDISTURBED N/A	19. TOTAL NUMBER OF CORE BOXES N/A			
20. SAMPLES FOR CHEMICAL ANALYSIS See comments below	VOC N/A	METALS See below	OTHER (SPECIFY) See below	OTHER(SPECIFY) See below	OTHER(SPECIFY) See below	21. TOTAL CORE RECOVERY N/A %
22. DISPOSITION OF HOLE N/A	BACKFILLED	MONITORING WELL N/A	OTHER (SPECIFY) N/A	23. SIGNATURE OF INSPECTOR N/A		

LOCATION SKETCH/COMMENTS SCALE:



Weather: Cool, temperature in the low 50's, rainy. Ground was very wet, standing water in some locations within the Cluster 1 boundary.

Thirty (30) borings were pushed using a systematic random location approach within the Cluster 1 boundary. The boring log summarizes all borings taken within Cluser 1.

Increments from one (1) to four (4) feet bgs from each soil boring was collected using the incremental sampling methodology (ISM). The subsurface sample was a composite of all 30 borings taken at this location.

All subsurface soil samples will be analyzed for TAL metals and common propellants used by the DoD including nitrocellulose, nitroglycerine, nitroguanidine, and perchlorate.

PROJECT	HOLE NUMBER
Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops	N/A

ENG FORM 5056-R, NOV 1998 (Proponent: CECW-EG)

Dual tube sleeves, 4Ft long by 1 1/4" wide

HTRW DRILLING LOG (CONTINUATION SHEET) CLUSTER C1)

HOLE NUMBER N/A

PROJECT Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellent Con Tops

INSPECTOR N/A

SHEET 2 OF 2 SHEETS

ELEVATION (a)	DEPTH (b) Ft	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
		0-1 Ft considered surface soil, not included in soil classification					
	1 Ft.	1 Ft - 3 Ft: CL/ML → lean clay / silt Slow transition to larger grain size as you approach 3 Ft. Light orangey brown • low N to medium plasticity in upper part of core • nonplastic to low toward 3 Ft. • Somewhat moist • Trace roots • Consistency = upper portion of core is firm & slowly transitions to soft toward 3 Ft interval					
	2 Ft.	• Structure = mostly homogeneous w/ lensing of weathered material toward 3 Ft. (mottling) • Toughness = medium to low toward 3 Ft.					2.75' to approx 3.25' → some occasions of a flat elongated weathered rock above the sandy layer
	3 Ft.	3 Ft - 4 Ft: (Distinct strata change from above) SW → Well graded sand, max. sand particle size ≈ medium • Light greyish brown • moist • Subangular/subrounded sand • Consistency = soft to somewhat firm Thumbindent ≈ 0.5" • Cementation = weak					3
	4 Ft.						4

PROJECT Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellent Con Tops HOLE NUMBER N/A

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HTRW DRILLING LOG

1. COMPANY NAME	2. SUBCONTRACTOR	SHEET SHEETS OF
3. PROJECT	4. LOCATION	
5. NAME OF DRILLER	6. MANUFACTURER'S DESIGNATION OF DRILL	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	8. HOLE LOCATION	
	9. SURFACE ELEVATION	
	10. DATE STARTED: April 12, 2016	11. DATE COMPLETED: April 12, 2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER(SPECIFY)	OTHER(SPECIFY)	21. TOTAL CORE RECOVERY
See comments below	N/A	See below	See below	See below	See below	N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
N/A	Bentonite	N/A	N/A	N/A

LOCATION SKETCH/COMMENTS SCALE:

Weather: Partly cloudy, temperature in the upper 40's, Ground was very wet/swampy throughout this area. Drill rig had to be careful to not sink too low and get stuck.

Thirty (30) borings were pushed using a systematic random location approach within the Cluster 3 boundary. The boring log summarizes all borings taken within Cluster 3.

Increments from one (1) to four (4) feet bgs from each soil boring was collected using the incremental sampling methodology (ISM). The subsurface sample was a composite of all 30 borings taken at this location.

All subsurface soil samples will be analyzed for TAL metals and common propellants used by the DoD including nitrocellulose, nitroglycerine, nitroguanidine, and Perchlorate.

PROJECT	HOLE NUMBER
Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops	N/A

HTRW DRILLING LOG (CONTINUATION SHEET) (CLUSTER 3)

HOLE NUMBER: N/A

PROJECT: Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Con Tops

INSPECTOR: N/A

SHEET 2 OF 2 SHEETS

ELEVATION (a)	DEPTH (b) Ft	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	BGS	Average recovery approximately 67.3% over the 30 borings ≈ 6" average surface material removed from core					
	1						
		CL → Lean clay w/ sand • Light brown • Moist → this horizon seemed to hold more moisture than the below interval • Very soft to Soft Consistency • Toughness → Low to medium at times • Some gravel throughout interval • Rock Flour present = white powder • Plasticity = medium • Some gravel → subangular					
	2						* On Occasion, a well sorted to moderately well sorted fine-med. sand layer separated the two intervals w/ lenses of 3"-6" thick. The division was weathered sandstone separating the strata. At times, there was no visual difference between the two strata, until the consistency was checked where it changed from very soft to hard when pushed w/ thumb.
		* 2½ Ft - 4 Ft ML/CL → silt / lean clay • Light Brown → mottling throughout all borings; grey, orangey-red in color • Somewhat moist, almost dry • Consistency → Hard, hand tool used to collect sample was difficult to scrape. • Plasticity → nonplastic to low • Crumbles when rolled between fingers, minor ribboning					
	3						
	4						

PROJECT: Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Con Tops

HOLE NUMBER: N/A

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

HTRW DRILLING LOG

1. COMPANY NAME	DISTRICT	HOLE NUMBER
2. SUBCONTRACTOR		SHEET SHEETS OF
3. PROJECT	4. LOCATION	
5. NAME OF DRILLER	6. MANUFACTURER'S DESIGNATION OF DRILL	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	8. HOLE LOCATION: Cluster 5 (See location sketch below, circled in light green)	
	9. SURFACE ELEVATION	
	10. DATE STARTED: April 12, 2016	11. DATE COMPLETED: April 12, 2016
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED	
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	

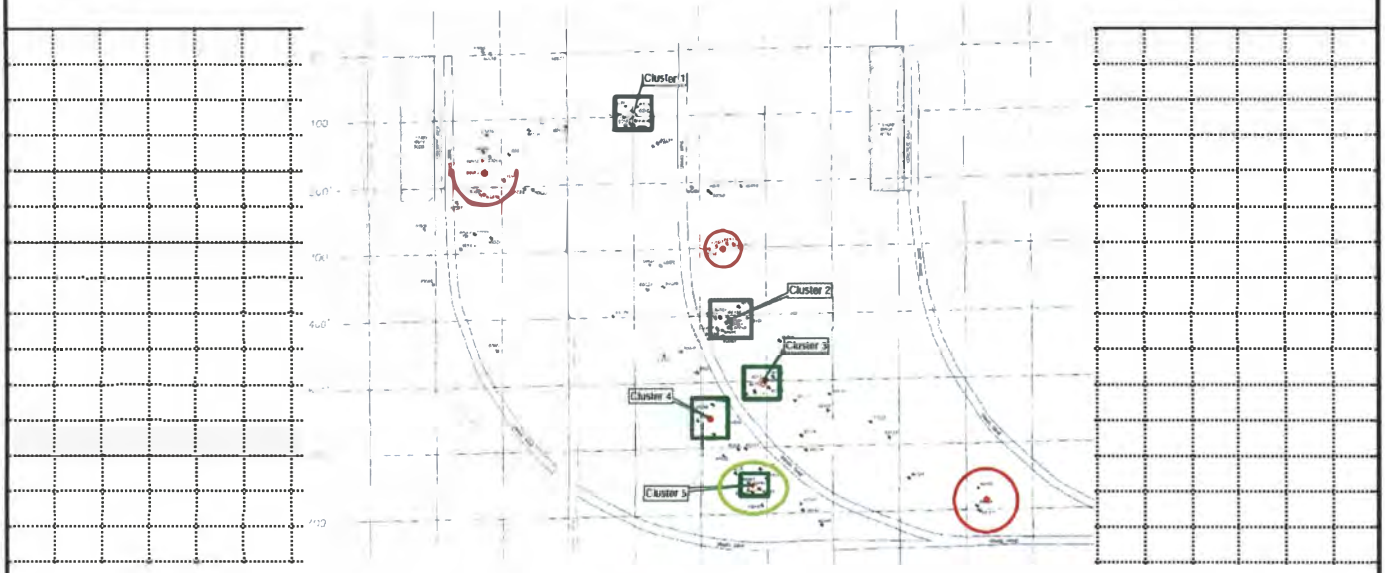
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER(SPECIFY)	OTHER(SPECIFY)	21. TOTAL CORE RECOVERY
See comments below	N/A	See below	See below	See below	See below	N/A %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
N/A	Bentonite	N/A	N/A	N/A

LOCATION SKETCH/COMMENTS

SCALE:



Weather: Partly cloudy, temperature in the upper 40's. Ground was wet from rain during the previous day. This cluster was bordered by drainage ditches to the south and east.

Thirty (30) borings were pushed using a systematic random location approach within the Cluster 5 boundary. The boring log summarizes all borings taken within Cluster 5.

Increments from one (1) to four (4) feet bgs from each soil boring was collected using the incremental sampling methodology (ISM). The subsurface sample was a composite of all 30 borings taken at this location.

All subsurface soil samples will be analyzed for TAL metals and common propellants used by the DoD including nitrocellulose, nitroglycerine, nitroguanidine, and Perchlorate.

PROJECT	HOLE NUMBER
Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellant Can Tops	N/A

HTRW DRILLING LOG (CONTINUATION SHEET) (CLUSTER C5)

HOLE NUMBER: N/A

PROJECT: Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellent Con Tops

INSPECTOR: N/A

SHEET 2 OF 2

ELEVATION (a)	DEPTH (b) Ft bgs	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
	1	Based avg. recovery from all borings ≈ 66% recovery • Top portion of recovered material was removed & considered surface material. Surface = 0-1 Ft. bgs					
	1.5	CL → Sandy Lean Clay • light brown, moist • Consistency → soft • medium to high plasticity • Toughness = low to medium					Lensing of very firm non plastic silty clay, approx. 3"-12" inches appearing at the bottom of core & intermintenly in the 3'-4' interval & the 1.5 to 2.5 Ft interval
	2						
	2.5	Occasional subangular sandstone "pancake" shape seperating horizons ≈ 2-3 inches thick SW-SM → Well graded Sand w/ silt & gravel • Subangular grains • Light brown, moist → top 1" of interval had noticeably more water saturation					
	3	• Cementation → weak to moderate • grain size range → medium to coarse					
	3.5						
	4						

PROJECT: Site Inspection at Compliance Restoration Site CC RVAAP-80 Group 2 Propellent Con Tops

HOLE NUMBER: N/A

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTsb-001M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/11/16 **Weather** 45° Rainy **Temperature** 45°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: ~~1200~~ 1400 hrs (1645)

Sample Depth: 1-4' FT (below surface)

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30
Decon: Dedicated - Each Day - (Each Location)

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives		Chromium +6		Ignitability			
Sample:	ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	Yes / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

See Ditch Log

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by Richard Cahn (Please Print)

Signature: [signature] Date: 4/11/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTsb-002M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/12/16 **Weather** Sunny **Temperature** 60° F

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 1300-1530 hrs (1650) **Sample Type:** Composite - (ISM) - Grab
If ISM, # of increments taken: 30

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Sample Depth: 1-4 FT (below surface) **Decon:** Dedicated - Each Day - (Each Location)

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives		Chromium +6		Ignitability			
Sample:	ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	Yes / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

See attached COC

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - TripBlanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by: Richard Callahan (Please Print)

Signature: Date: 4/12/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTsb-003M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/12/16 **Weather** Sunny **Temperature** 60° F

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 0830 - 1100 hrs (1230)

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Sample Depth: 1-4 FT (below surface)

Decon: Dedicated - Each Day - (Each Location)

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives		Chromium +6		Ignitability			
Sample:	ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	(Yes) / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

See HTRW DQC

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by: Richard Cahill (Please Print)

Signature: Date: 4/12/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTss-004M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/13/16 **Weather** Sunny **Temperature** 65°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 1440 hrs

Sample Depth: 0-1 FT (below surface)

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30

Decon: (Dedicated) - Each Day - Each Location

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	0.0 ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives		Chromium +6		Ignitability			
Sample	0.0 ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	Yes / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

Dark Tan/Brown Sandy Clay

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by: Richard Calkin (Please Print)

Signature: Richard Calkin Date 4/13/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTss-005M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/13/16 **Weather** Sunny **Temperature** 65°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	Well Purging Form Yes - No							

Sample Collection: 1020 hrs

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Sample Depth: 0 - 1 FT (below surface)

Decon (Dedicated) - Each Day - Each Location

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives		Chromium +6		Ignitability			
Sample:	ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	Yes (No)		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID	PCTss-005M-0001-DUP		
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

DARK Brown S.M. Coarse to Light Red Sandy Clay

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID: _____

Name: _____

Agency/Company: _____

Address: _____

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by: Richard Cullen (Please Print)

Signature: _____ Date: 4/13/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTss-006M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/13/16 **Weather** Sunny **Temperature** 65°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 1245 hrs

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Sample Depth: 0 - 1 FT (below surface)

Decon (Dedicated) - Each Day - Each Location

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC	X	TPH GRO		Corrosivity			
Background:	0.0 ppm	SVOC	X	TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives	X	Chromium +6		Ignitability			
Sample:	0.0 ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs	X	Asbestos		MS/MSD	Yes (No)		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID	**PCTss-006M-0001-ER**		
Turbidity	NTU	Grain Size				Trip Blank ID	**PCTss-006M-0001-TB**		

Sample Description

Brown silty clay

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by: Richard Callahan (Please Print)

Signature: Richard Callahan Date: 4/13/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTss-007M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/13/16 **Weather** Sunny **Temperature** 65°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 0910 hrs

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Sample Depth: 0-1 FT (below surface)

Decon: (Dedicated) - Each Day - Each Location

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	0.0 ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
	0.0	Explosives		Chromium +6		Ignitability			
Sample:	ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	Yes / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

DARK SILTY LOAM
WET / SATURATED

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID: _

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by: Richard Callahan (Please Print)

Signature: [signature] Date: 4/13/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTss-008M-0001-SO

Ravenna Army Ammunition Plant

Date: 4/13/16 **Weather** Sunny **Temperature** 65°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 0830 hrs

Sample Depth: 0-1 FT (below surface)

Sample Type: Composite - (ISM) - Grab
If ISM, # of increments taken: 30
Decon: (Dedicated) - Each Day - Each Location

Location: Plotted on Map - Staked in Field
Estimated - Measured - (Surveyed)

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	0.0 ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanid			
		Explosives		Chromium +6		Ignitability			
Sample:	0.0 ppm	Propellants	X	Nitrate					
Water Level	FT	TAL Metals	X	Sulfate		**QA Samples**			
Temperature	°C	Pesticides/PCBs		Asbestos		MS/MSD	Yes / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH		Duplicate ID			NA
pH	units	Perchlorate	X	TOC		Equipment Rinse ID			NA
Turbidity	NTU	Grain Size				Trip Blank ID			NA

Sample Description

Saturated Light Brown Silty Loam Soil Sand

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - TripBlanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: Christine McNeill (Please Print)

Signature: Christine McNeill

Reviewed by R. Clegg C. Clegg (Please Print)

Signature: Date: 4/13/16

Field Sampling Report

PIKA INTERNATIONAL, INC.

Project Name: Group 2 Propellant Can Tops

Location ID: PCTss-WC001-SO

Ravenna Army Ammunition Plant

Date: 4/13/16 **Weather** Sunny **Temperature** 65°

Sampling Information

Source	Groundwater / Product		Surface Water		Soils / Sediments / Sludge			
Method	Bailer		Sample Bottle		Scoop		Trowel	
	Pump		Bacon Bomb		Bowl		Hand Auger	
	Micro-purge				Push Probe		Plastic Liner	
Type/Construction					Mattocks		Direct-Push	X
Miscellaneous	**Well Purging Form** Yes - No							

Sample Collection: 1530 hrs

Sample Type: (Composite) - ISM - (Grab)

If ISM # of increments taken

Location: Plotted on Map - Staked in Field - Estimated - Measured - Surveyed (NA)

Sample Depth: 0-3' FT (below surface) for PRism

Decon (Dedicated) - Each Day - Each Location

Field Parameters (at time of sample)		**Analytical Parameters**				**Other Parameters**			
PID / FID Readings:		VOC		TPH GRO		Corrosivity			
Background:	0.0 ppm	SVOC		TPH DRO		Reactivity Sulfide/Cyanide			
		Explosives		Chromium +6		Ignitability			
Sample:	0.0 ppm	Propellants		Nitrate					
Water Level	FT	TAL Metals		Total Sulfide	X	**QA Samples**			
Temperature	°C	Pesticides/PCBs		Cyanide	X	MS/MSD	Yes / No		NA
Sp. Conductance:	uMHOs	Cyanides		pH	X	Duplicate ID			NA
pH	units	Perchlorate		Full TCLP	X	Equipment Rinse ID			NA
Turbidity	NTU	Grain Size		Flash Point	X	Trip Blank ID			NA

Sample Description

Soil, Glass, Plastic Liners

Soil sample description should include:

Munsell Color Odor Staining Texture Sorting Plasticity Moisture

Water sample description should include:

Color Odor Sheen Turbidity

Split Sample

Split Sample ID:

Name:

Agency/Company:

Address:

QA/QC Provided: MS/MSD - Duplicate - Trip Blanks - Field Blanks

Parameters: Same as Above - As Listed

Logged By: R. Callahan (Please Print)

Signature:

Reviewed by SMS (Please Print)

Signature:

Date: 4/13/16

ISM Surface and Shallow Sub-Surface Sampling

Photo Log

ISM Shallow Sub-Surface Magnetometer
Anomaly Avoidance

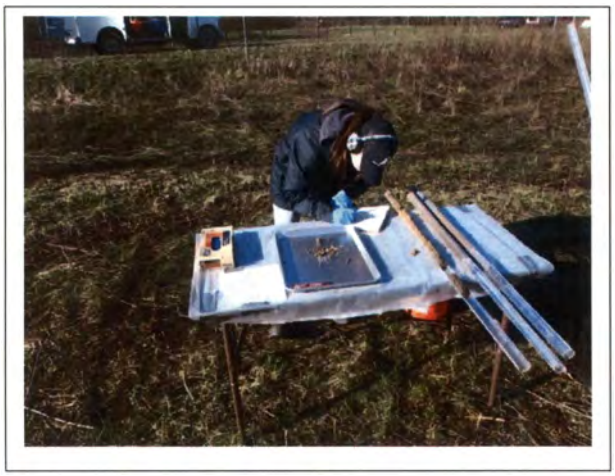
Track-Mounted Geoprobe Drilling – Direct Push
ISM Shallow Sub-Surface Sampling

Sealing Drilling Location with Bentonite Pellets

Sealed Drilling Location

ISM Surface and Shallow Sub-Surface Sampling

Photo Log (continued)



Logging and sampling ISM Sub-Surface Intervals

Lanes and Random ISM Surface Sampling Locations – Cluster 6

ISM Surface Soil Sample Dedicated Stainless Steel Push Probe

Collection of 30 Aliquots for ISM Surface Soil Sample

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG Form-502

I. GENERAL PROJECT AND SITE INFORMATION

Date: 11 Apr 16	Instructor(s): Melvin Lou	Time: 0700	Log No.: 1

Site Name & Location: Area 2

Contract No.:	Contract No.:
Site Manager or SUXOS: Rick Callahan	SSHO:

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Soil Samples

Applicable AHA's Reviewed for Today's Tasks: Mec Avoidance

Anticipated Weather Conditions for the Day: Rain

Safety Concerns: Pinch Points Slips Trips, Fall, Mec Avoidance

Permits Required: ☑ Safe Work Permit ☐ Excavation Permit ☐ Penetration Permit ☐ Other:

☐ Hot Work Permit ☐ Lift Permit ☐ Lockout / Tagout ☐ Permits Are On Site

Heavy Equipment to be Used Today: Auger hole Track Machine

Site Control and Buddy Procedures:

Subcontractors Working On-site Today and Their Tasks: Frontz Drilling

Emergency Procedures:

Assembly Locations: Gate Area 2

Scheduled Deliveries for Today: No

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Richard Callahan		

PIKA
INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG Form-502

Christine McNeill	Terranear PMC	

I certify that the personnel listed on this roster have received the safety and health training described above.

Site Safety and Health Officer

SAME

Sr. UXO Supervisor or Site Supervisor

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG Form-502

I. GENERAL PROJECT AND SITE INFORMATION

Date:	Instructor(s):	Time:	Log No.:
12 Apr 16	Melvin Lam	0700	2

Site Name & Location: Area 2 RIMAP

Contract No.:	Contract No.:
Site Manager or SUXOS: Rick Callahan	SSHO:

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Soil Samples

Applicable AHA's Reviewed for Today's Tasks: Mec Avoidance

Anticipated Weather Conditions for the Day: Clear

Safety Concerns: Pinch Points, Slips Trips Falls Mec Avoidance

Permits Required: ☐ Safe Work Permit ☐ Excavation Permit ☐ Penetration Permit ☐ Other: ☐ Hot Work Permit ☐ Lift Permit ☐ Lockout / Tagout ☐ Permits Are On Site

Heavy Equipment to be Used Today: Down hole Track Mounting

Site Control and Buddy Procedures:

Subcontractors Working On-site Today and Their Tasks: Frontier Drilling

Emergency Procedures: Main Gate Notification

Assembly Locations: Gate Area 2

Scheduled Deliveries for Today: None

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Christine McNeill	Christine McNeill	TerraneaRPMC

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG Form-502

Joe Henley		Frontz Drilling Inc.
Rickie Shanks		Frontz Drilling Inc
Rick Callahan		Tilt
James N Trumble	James N. Trumble III	USACE
Kathryn S. Tait	Kathryn S Tait	CHARNG
Kevin Sedlak		ARNG

I certify that the personnel listed on this roster have received the safety and health training described above.

Mark Lee — Site Safety and Health Officer

Sr. UXO Supervisor or Site Supervisor

PIKA INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG Form-502

I. GENERAL PROJECT AND SITE INFORMATION

Date:	Instructor(s):	Time:	Log No.:
13 Apr 12	Melvin Lay	0700	3

Site Name & Location: Area 2 RVAAP

Contract No.:	Contract No.:
Site Manager or SUXOS: Rich Callahan	SSHO:

II. SAFETY AND HEALTH TOPICS COVERED

Tasks Being Conducted: Soil Samples

Applicable AHA's Reviewed for Today's Tasks: MEC Avoidance

Anticipated Weather Conditions for the Day: Clear

Safety Concerns: Pinch Points, Slips Trips Falls MEC Avoidance

Permits Required: ☐ Safe Work Permit ☐ Excavation Permit ☐ Penetration Permit ☐ Other:

☐ Hot Work Permit ☐ Lift Permit ☐ Lockout / Tagout ☐ Permits Are On Site

Heavy Equipment to be Used Today: None

Site Control and Buddy Procedures:

Subcontractors Working On-site Today and Their Tasks:

Emergency Procedures: Main Gate Notification

Assembly Locations: Gate Area 2

Scheduled Deliveries for Today: None

III. DAILY SAFETY BRIEFING ATTENDEES

Name (printed)	Signature	Organization
Richard Callahan		Pika

PIKA
INTERNATIONAL, INC.

DAILY TASK AND SAFETY BRIEFING LOG Form-502

Christine McNeill	Terranear PMC	Christine McNeill

I certify that the personnel listed on this roster have received the safety and health training described above.

Mel Lee

Site Safety and Health Officer

Sr. UXO Supervisor or Site Supervisor

APPENDIX B: LABORATORY DATA

(FULL LABORATORY PACKAGE ON CD)

APPENDIX C: ADR AND DATA VALIDATION REPORTS

Field QC Assignments and Associated Samples

EDD File Name: 320-18324-1

eQapp Name: Pika_Ravenna_05012016

	Associated Samples	Sample Collection Date
Field QC Sample: PCTss-005M-0001-DS **QC Type:** FD		
	PCTss-005M-0001-SO	4/13/2016 10:20:00 AM
Field QC Sample: PCTss-006M-0001-ER **QC Type:** EB		
	PCTsb-001M-0001-SO	4/11/2016 4:45:00 PM
	PCTsb-002M-0001-SO	4/12/2016 4:50:00 PM
	PCTsb-003M-0001-SO	4/12/2016 12:30:00 PM
	PCTss-004M-0001-SO	4/13/2016 2:40:00 PM
	PCTss-005M-0001-DS	4/13/2016 10:25:00 AM
	PCTss-005M-0001-SO	4/13/2016 10:20:00 AM
	PCTss-006M-0001-SO	4/13/2016 12:45:00 PM
	PCTss-007M-0001-SO	4/13/2016 9:10:00 AM
	PCTss-008M-0001-SO	4/13/2016 8:30:00 AM
Field QC Sample: PCTss-006M-0001-TB **QC Type:** TB		
	PCTsb-001M-0001-SO	4/11/2016 4:45:00 PM
	PCTsb-002M-0001-SO	4/12/2016 4:50:00 PM
	PCTsb-003M-0001-SO	4/12/2016 12:30:00 PM
	PCTss-004M-0001-SO	4/13/2016 2:40:00 PM
	PCTss-005M-0001-DS	4/13/2016 10:25:00 AM
	PCTss-005M-0001-SO	4/13/2016 10:20:00 AM
	PCTss-006M-0001-ER	4/13/2016 12:30:00 PM
	PCTss-006M-0001-SO	4/13/2016 12:45:00 PM
	PCTss-007M-0001-SO	4/13/2016 9:10:00 AM
	PCTss-008M-0001-SO	4/13/2016 8:30:00 AM

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.48	U	0.48	CRDL	2.0	MRL	mg/L	R	StoA

Method Category: GENCHEM

Method: 353.2 **Matrix: SO**

Sample ID: PCTsb-001M-0001-SO **Collected:** 4/11/2016 4:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTsb-002M-0001-SO **Collected:** 4/12/2016 4:50:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTsb-003M-0001-SO **Collected:** 4/12/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTss-004M-0001-SO **Collected:** 4/13/2016 2:40:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.96	J	0.78	CRDL	5.0	MRL	mg/Kg	J	RI, StoA

Sample ID: PCTss-005M-0001-DS **Collected:** 4/13/2016 10:25:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTss-005M-0001-SO **Collected:** 4/13/2016 10:20:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: GENCHEM

Method: 353.2 **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.84	J	0.78	CRDL	5.0	MRL	mg/Kg	J	RI, StoA

Sample ID: PCTss-007M-0001-SO **Collected:** 4/13/2016 9:10:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.77	U	0.77	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTss-008M-0001-SO **Collected:** 4/13/2016 8:30:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Method Category: GENCHEM

Method: 6850 **Matrix: SO**

Sample ID: PCTsb-001M-0001-SO **Collected:** 4/11/2016 4:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.41	J	0.15	CRDL	5.1	MRL	ug/Kg	J	RI

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.027	J	0.020	CRDL	0.10	MRL	mg/L	J	RI
SODIUM	0.31	J	0.25	CRDL	1.0	MRL	mg/L	J	RI
ZINC	0.0037	J	0.0030	CRDL	0.020	MRL	mg/L	U	Mb

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES/TOT **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9700	D J	5.5	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.92	U J	0.92	CRDL	2.9	MRL	mg/Kg	R	Ms
CADMIUM	0.23	J D	0.029	CRDL	0.29	MRL	mg/Kg	J	Rl
IRON	15000	D J	2.0	CRDL	9.8	MRL	mg/Kg	J	Ms
MANGANESE	730	D J	0.25	CRDL	0.98	MRL	mg/Kg	J	Ms
SODIUM	41	J D	20	CRDL	98	MRL	mg/Kg	J	Rl

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
4,4'-DDE	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
4,4'-DDT	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ALDRIN	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
ALPHA-BHC	0.0076	U	0.0076	CRDL	0.054	MRL	ug/L	UJ	StoE
ALPHA-CHLORDANE	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
BETA-BHC	0.0076	U	0.0076	CRDL	0.054	MRL	ug/L	UJ	StoE
DELTA-BHC	0.012	U	0.012	CRDL	0.054	MRL	ug/L	UJ	StoE
DIELDRIN	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDOSULFAN I	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDOSULFAN II	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDOSULFAN SULFATE	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDRIN	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDRIN ALDEHYDE	0.027	U	0.027	CRDL	0.11	MRL	ug/L	UJ	StoE
ENDRIN KETONE	0.022	U	0.022	CRDL	0.11	MRL	ug/L	UJ	StoE
gamma-BHC (Lindane)	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
GAMMA-CHLORDANE	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
HEPTACHLOR	0.0076	U	0.0076	CRDL	0.054	MRL	ug/L	UJ	StoE
HEPTACHLOR EPOXIDE	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
METHOXYCHLOR	0.046	U	0.046	CRDL	0.11	MRL	ug/L	UJ	StoE
TOXAPHENE	0.55	U	0.55	CRDL	2.2	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: SVOA
Method: 8081B **Matrix: AQ**

Method Category: SVOA
Method: 8081B **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALPHA-CHLORDANE	0.47	J	0.20	CRDL	1.7	MRL	ug/Kg	J	RI
DELTA-BHC	0.24	J	0.16	CRDL	1.7	MRL	ug/Kg	J	RI

Method Category: SVOA
Method: 8082A **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PCB-1016	0.098	U	0.098	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1221	0.12	U	0.12	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1232	0.18	U	0.18	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1242	0.13	U	0.13	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1248	0.11	U	0.11	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1254	0.11	U	0.11	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1260	0.11	U	0.11	CRDL	1.1	MRL	ug/L	UJ	StoE

Method Category: SVOA
Method: 8270D **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Benzo[a]anthracene	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-TRICHLOROPHENOL	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2,4,6-TRICHLOROPHENOL	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DICHLOROPHENOL	2.7	U	2.7	CRDL	10	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: **SVOA**

Method: **8270D** ***Matrix:*** **AQ**

Sample ID: **PCTss-006M-0001-ER** ***Collected:*** **4/13/2016 12:30:00 PM** ***Analysis Type:*** **RES-ACID** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4-DIMETHYLPHENOL	2.3	U	2.3	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DINITROPHENOL	21	U	21	CRDL	62	MRL	ug/L	UJ	StoE
2-CHLOROPHENOL	1.6	U	1.6	CRDL	10	MRL	ug/L	UJ	StoE
2-METHYLPHENOL	0.96	U	0.96	CRDL	10	MRL	ug/L	UJ	StoE
2-NITROPHENOL	2.0	U	2.0	CRDL	10	MRL	ug/L	UJ	StoE
3 & 4 Methylphenol	1.2	U	1.2	CRDL	10	MRL	ug/L	UJ	StoE
4,6-DINITRO-2-METHYLPHENOL	2.3	U	2.3	CRDL	62	MRL	ug/L	UJ	StoE
4-CHLORO-3-METHYLPHENOL	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
4-NITROPHENOL	6.3	U	6.3	CRDL	62	MRL	ug/L	UJ	StoE
BENZOIC ACID	21	U Q	21	CRDL	77	MRL	ug/L	R	Lcs, StoE
PENTACHLOROPHENOL	5.2	U	5.2	CRDL	62	MRL	ug/L	UJ	StoE
PHENOL	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE

Sample ID: **PCTss-006M-0001-ER** ***Collected:*** **4/13/2016 12:30:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRICHLOROBENZENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
1,2-DICHLOROBENZENE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
1,3-DICHLOROBENZENE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
1,4-DICHLOROBENZENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DINITROTOLUENE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2,6-DINITROTOLUENE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2-CHLORONAPHTHALENE	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
2-METHYLNAPHTHALENE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
2-NITROANILINE	2.1	U	2.1	CRDL	52	MRL	ug/L	UJ	StoE
3,3'-DICHLOROBENZIDINE	0.99	U	0.99	CRDL	52	MRL	ug/L	UJ	StoE
3-NITROANILINE	1.4	U	1.4	CRDL	52	MRL	ug/L	UJ	StoE
4-BROMOPHENYL PHENYL ETHER	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
4-CHLOROANILINE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
4-CHLOROPHENYL PHENYL ETHER	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
4-NITROANILINE	1.5	U	1.5	CRDL	52	MRL	ug/L	UJ	StoE
ACENAPHTHENE	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
ACENAPHTHYLENE	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
ANTHRACENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: **SVOA**

Method: **8270D** ***Matrix:*** **AQ**

Sample ID: **PCTss-006M-0001-ER** ***Collected:*** **4/13/2016 12:30:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Benzo[a]pyrene	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[b]fluoranthene	1.2	U	1.2	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[g,h,i]perylene	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[k]fluoranthene	0.99	U	0.99	CRDL	10	MRL	ug/L	UJ	StoE
BENZYL ALCOHOL	2.7	U	2.7	CRDL	10	MRL	ug/L	UJ	StoE
Bis (2-chloroisopropyl) ether	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
BIS(2-CHLOROETHOXY)METHANE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Bis(2-chloroethyl)ether	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
BIS(2-ETHYLHEXYL) PHTHALATE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Butyl benzyl phthalate	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
CARBAZOLE	1.2	U	1.2	CRDL	10	MRL	ug/L	UJ	StoE
CHRYSENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
DIBENZ(A,H)ANTHRACENE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
DIBENZOFURAN	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
DIETHYL PHTHALATE	0.96	U	0.96	CRDL	10	MRL	ug/L	UJ	StoE
DIMETHYL PHTHALATE	0.91	U	0.91	CRDL	10	MRL	ug/L	UJ	StoE
DI-N-BUTYL PHTHALATE	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
DI-N-OCTYL PHTHALATE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
FLUORANTHENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
FLUORENE	0.96	U	0.96	CRDL	10	MRL	ug/L	UJ	StoE
HEXACHLOROBENZENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
HEXACHLOROBUTADIENE	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
HEXACHLOROCYCLOPENTADIENE	5.2	U	5.2	CRDL	52	MRL	ug/L	UJ	StoE
HEXACHLOROETHANE	1.4	U Q	1.4	CRDL	10	MRL	ug/L	UJ	Lcs, StoE
Indeno[1,2,3-cd]pyrene	3.5	U	3.5	CRDL	15	MRL	ug/L	UJ	StoE
ISOPHORONE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
NAPHTHALENE	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
NITROBENZENE	1.6	U	1.6	CRDL	10	MRL	ug/L	UJ	StoE
N-Nitrosodi-n-propylamine	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
N-NITROSODIPHENYLAMINE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
PHENANTHRENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
PYRENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZOIC ACID	280	U J	280	CRDL	1600	MRL	ug/Kg	UJ	Ms

Method Category: VOA

Method: 8260C **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.20	J	0.12	CRDL	1.0	MRL	ug/L	J	Rl

Sample ID: PCTss-006M-0001-TB **Collected:** 4/13/2016 8:00:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	20	H	2.1	CRDL	10	MRL	ug/L	J	StoA

Sample ID: PCTss-006M-0001-TB **Collected:** 4/13/2016 8:00:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.77	J	0.35	CRDL	1.0	MRL	ug/L	J	Rl

Method Category: VOA

Method: 8260C **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	8.3	J	2.0	CRDL	28	MRL	ug/Kg	U	Tb

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Reason Code Legend

Reason Code	*Description*
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value
StoA	Sampling to Analysis Estimation
StoA	Sampling to Analysis Rejection
StoE	Sampling to Extraction Estimation
Surr	Surrogate/Tracer Recovery Upper Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				14	TOXAPHENE (8001-35-2) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/2-A.
Analytical Results				14	ENDOSULFAN I (959-98-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	HEPTACHLOR (76-44-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ENDRIN ALDEHYDE (7421-93-4) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	4,4'-DDE (72-55-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	4,4'-DDD (72-54-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	METHOXYCHLOR (72-43-5) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ENDRIN (72-20-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	DIELDRIN (60-57-1) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	gamma-BHC (Lindane) (58-89-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ENDRIN KETONE (53494-70-5) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	GAMMA-CHLORDANE (5103-74-2) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ALPHA-CHLORDANE (5103-71-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	4,4'-DDT (50-29-3) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ENDOSULFAN II (33213-65-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	DELTA-BHC (319-86-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	BETA-BHC (319-85-7) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ALPHA-BHC (319-84-6) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ALDRIN (309-00-2) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	ENDOSULFAN SULFATE (1031-07-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	HEPTACHLOR EPOXIDE (1024-57-3) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCS 320-106848/4-A.
Analytical Results				14	TOXAPHENE (8001-35-2) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/2-A.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				14	ENDOSULFAN I (959-98-8) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	HEPTACHLOR (76-44-8) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ENDRIN ALDEHYDE (7421-93-4) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	4,4'-DDE (72-55-9) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	4,4'-DDD (72-54-8) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	METHOXYCHLOR (72-43-5) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ENDRIN (72-20-8) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	DIELDRIN (60-57-1) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	gamma-BHC (Lindane) (58-89-9) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ENDRIN KETONE (53494-70-5) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	GAMMA-CHLORDANE (5103-74-2) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ALPHA-CHLORDANE (5103-71-9) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	4,4'-DDT (50-29-3) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ENDOSULFAN II (33213-65-9) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	DELTA-BHC (319-86-8) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	BETA-BHC (319-85-7) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ALPHA-BHC (319-84-6) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ALDRIN (309-00-2) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	ENDOSULFAN SULFATE (1031-07-8) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	HEPTACHLOR EPOXIDE (1024-57-3) is a required SPK compound for Method: '8081B', Matrix: 'SO' and QCType: 'LCS', but is not reported for sample LCS 320-107618/3-A.
Analytical Results				14	TOXAPHENE (8001-35-2) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/3-A.
Analytical Results				14	ENDOSULFAN I (959-98-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				14	HEPTACHLOR (76-44-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ENDRIN ALDEHYDE (7421-93-4) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	4,4'-DDE (72-55-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	4,4'-DDD (72-54-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	METHOXYCHLOR (72-43-5) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ENDRIN (72-20-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	DIELDRIN (60-57-1) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	gamma-BHC (Lindane) (58-89-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ENDRIN KETONE (53494-70-5) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	GAMMA-CHLORDANE (5103-74-2) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ALPHA-CHLORDANE (5103-71-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	4,4'-DDT (50-29-3) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ENDOSULFAN II (33213-65-9) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	DELTA-BHC (319-86-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	BETA-BHC (319-85-7) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ALPHA-BHC (319-84-6) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ALDRIN (309-00-2) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	ENDOSULFAN SULFATE (1031-07-8) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				14	HEPTACHLOR EPOXIDE (1024-57-3) is a required SPK compound for Method: '8081B', Matrix: 'AQ' and QCType: 'LCS', but is not reported for sample LCSD 320-106848/5-A.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-001M-0001-SO.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-002M-0001-SO.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTsb-003M-0001-SO.
Analytical Results				14	4-NITROTOLUENE (99-99-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	1,3-DINITROBENZENE (99-65-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	1,3,5-TRINITROBENZENE (99-35-4) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	3-NITROTOLUENE (99-08-1) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	NITROBENZENE (98-95-3) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	2-NITROTOLUENE (88-72-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	PETN (78-11-5) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				14	2,6-DINITROTOLUENE (606-20-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	Tetryl (479-45-8) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	HMX (2691-41-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	RDX (121-82-4) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	2,4-DINITROTOLUENE (121-14-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	2,4,6-TRINITROTOLUENE (118-96-7) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMS.
Analytical Results				14	4-NITROTOLUENE (99-99-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	1,3-DINITROBENZENE (99-65-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	1,3,5-TRINITROBENZENE (99-35-4) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	3-NITROTOLUENE (99-08-1) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	NITROBENZENE (98-95-3) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	2-NITROTOLUENE (88-72-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	PETN (78-11-5) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	2,6-DINITROTOLUENE (606-20-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	Tetryl (479-45-8) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	HMX (2691-41-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	RDX (121-82-4) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	2,4-DINITROTOLUENE (121-14-2) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				14	2,4,6-TRINITROTOLUENE (118-96-7) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				14	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required SPK compound for Method: '8330B', Matrix: 'SO' and QCType: 'MS', but is not reported for sample PCTsb-003M-0001-SOMSD.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-004M-0001-SO.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-DS.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-005M-0001-SO.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-007M-0001-SO.
Analytical Results				10	4-NITROTOLUENE (99-99-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	1,3-DINITROBENZENE (99-65-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	1,3,5-TRINITROBENZENE (99-35-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	3-NITROTOLUENE (99-08-1) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	NITROBENZENE (98-95-3) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	2-NITROTOLUENE (88-72-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	PETN (78-11-5) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	2,6-DINITROTOLUENE (606-20-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	Tetryl (479-45-8) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	2-AMINO-4,6-DINITROTOLUENE (35572-78-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	HMX (2691-41-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	RDX (121-82-4) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.

EDD Warning Log

Lab Reporting Batch ID: 320-18324-1

eQAPP: Pika_Ravenna_05012016 **Laboratory: TA SAC**

Table	Line #	Column	Value	Warning #	Description
Analytical Results				10	2,4-DINITROTOLUENE (121-14-2) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	2,4,6-TRINITROTOLUENE (118-96-7) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Analytical Results				10	4-AMINO-2,6-DINITROTOLUENE (19406-51-0) is a required target analyte for Method: '8330B' and Matrix: 'SO', but is not reported for sample PCTss-008M-0001-SO.
Sample Analysis	47	PreparationBatch	320-107226	17	This batch has more that one sample with QCType MB.
Sample Analysis	48	PreparationBatch	320-107226	17	This batch has more that one sample with QCType MB.
Sample Analysis	49	PreparationBatch	320-107232	17	This batch has more that one sample with QCType MB.
Sample Analysis	50	PreparationBatch	320-107232	17	This batch has more that one sample with QCType MB.
Sample Analysis	12	PreparationBatch	320-107232	17	This batch has more that one sample with QCType LCS.
Sample Analysis	13	PreparationBatch	320-107232	17	This batch has more that one sample with QCType LCS.
Sample Analysis	83	MethodBatch	320-107232	17	This batch has more that one sample with QCType MS.
Sample Analysis	84	MethodBatch	320-107232	17	This batch has more that one sample with QCType MS.
Sample Analysis	88	MethodBatch	320-107232	17	This batch has more that one sample with QCType MSD.
Sample Analysis	89	MethodBatch	320-107232	17	This batch has more that one sample with QCType MSD.
Sample Analysis	41	PreparationBatch	320-106848	17	This batch has more that one sample with QCType MB.
Sample Analysis	42	PreparationBatch	320-106848	17	This batch has more that one sample with QCType MB.
Sample Analysis	5	PreparationBatch	320-106848	17	This batch has more that one sample with QCType LCS.
Sample Analysis	6	PreparationBatch	320-106848	17	This batch has more that one sample with QCType LCS.
Sample Analysis	38	PreparationBatch	320-106710	17	This batch has more that one sample with QCType MB.
Sample Analysis	39	PreparationBatch	320-106710	17	This batch has more that one sample with QCType MB.
Sample Analysis	2	PreparationBatch	320-106710	17	This batch has more that one sample with QCType LCS.
Sample Analysis	3	PreparationBatch	320-106710	17	This batch has more that one sample with QCType LCS.
Sample Analysis				38	MethodBatch '320-108702' is missing a sample of QCType 'MS' for LabAnalysisRefMethodID '7471A'
Sample Analysis				38	MethodBatch '320-108702' is missing a sample of QCType 'MSD' for LabAnalysisRefMethodID '7471A'
Sample Analysis	51	PreparationBatch	320-107618	17	This batch has more that one sample with QCType MB.
Sample Analysis	52	PreparationBatch	320-107618	17	This batch has more that one sample with QCType MB.
Sample Analysis	14	PreparationBatch	320-107618	17	This batch has more that one sample with QCType LCS.
Sample Analysis	15	PreparationBatch	320-107618	17	This batch has more that one sample with QCType LCS.
Sample Analysis				38	MethodBatch '320-107922' is missing a sample of QCType 'MS' for LabAnalysisRefMethodID '8260C'
Sample Analysis				38	MethodBatch '320-107922' is missing a sample of QCType 'MSD' for LabAnalysisRefMethodID '8260C'
Sample Analysis				38	MethodBatch '320-107200' is missing a sample of QCType 'MS' for LabAnalysisRefMethodID '8260C'
Sample Analysis				38	MethodBatch '320-107200' is missing a sample of QCType 'MSD' for LabAnalysisRefMethodID '8260C'

Data Review Summary

Lab Reporting Batch ID: 320-18324-1
Laboratory: TA SAC
EDD Filename: 320-18324-1
eQAPP Name: Pika_Ravenna_05012016

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	SR
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	SR
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	SR

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**
EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: 353.2 **Preparation Method: Method**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
PCTss-006M-0001-ER (RES)	Sampling To Analysis	649.25	48.00	HOURS	J (all detects)
PCTss-006M-0001-ERMS (RES)		649.25	48.00	HOURS	R (all non-detects)
PCTss-006M-0001-ERMSD (RES)		649.50	48.00	HOURS	

Method: 8081B **Preparation Method: Method**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
PCTss-006M-0001-ER (RES)	Sampling To Extraction	6.00	5.00	DAYS	J(all detects)
PCTss-006M-0001-ER (RES2)		6.00	5.00	DAYS	UJ(all non-detects)

Method: 8082A **Preparation Method: Method**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
PCTss-006M-0001-ER (RES)	Sampling To Extraction	6.00	5.00	DAYS	J(all detects) UJ(all non-detects)

Method: 8260C **Preparation Method: Method**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
PCTss-006M-0001-TB (RE)	Sampling To Analysis	15.00	14.00	DAYS	J(all detects) UJ(all non-detects)

Method: 8270D **Preparation Method: Method**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
PCTss-006M-0001-ER (RES)	Sampling To Extraction	6.00	5.00	DAYS	J(all detects) UJ(all non-detects)

Method: 353.2 **Preparation Method: Method**
Matrix: SO

Sample ID	Type	Actual	Criteria	Units	Flag
PCTsb-001M-0001-SO (RES)	Sampling To Analysis	574.75	48.00	HOURS	J(all detects)
PCTsb-002M-0001-SO (RES)		550.75	48.00	HOURS	R(all non-detects)
PCTsb-003M-0001-SO (RES)		555.00	48.00	HOURS	
PCTsb-003M-0001-SOMS (RES)		555.00	48.00	HOURS	
PCTsb-003M-0001-SOMSD (RES)		555.25	48.00	HOURS	
PCTss-004M-0001-SO (RES)		529.00	48.00	HOURS	
PCTss-005M-0001-DS (RES)		533.25	48.00	HOURS	
PCTss-005M-0001-SO (RES)		533.25	48.00	HOURS	
PCTss-006M-0001-SO (RES)		531.25	48.00	HOURS	
PCTss-007M-0001-SO (RES)		534.75	48.00	HOURS	
PCTss-008M-0001-SO (RES)		535.50	48.00	HOURS	

Project Name and Number: W912QR-12-F-0212 -

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**
EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: 8260C **Preparation Method: Method**
Matrix: SO

Sample ID	*Type*	*Actual*	*Criteria*	*Units*	*Flag*
PCTss-006M-0001-SO (RE)	Sampling To Analysis	24.00	14.00	DAYS	J(all detects) UJ(all non-detects)

Lab Control Spike/Lab Control Spike Duplicate Outlier Report

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: **8270D**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*LCS %R*	*LCSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
LCS 320-106852/2-A LCSD 320-106852/3-A (PCTss-006M-0001-ER)	BENZOIC ACID	0	0	10.00-40.00	-	BENZOIC ACID	J (all detects) R (all non-detects)
LCSD 320-106852/3-A (PCTss-006M-0001-ER)	HEXACHLOROETHANE	-	-	21.00-115.00	21 (20.00)	HEXACHLOROETHANE	J(all detects) UJ(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: 8081B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
PCTss-006M-0001-SOMS PCTss-006M-0001-SOMSD (PCTss-006M-0001-SO)	ENDOSULFAN I	153	424	53.00-132.00	95 (30.00)	ENDOSULFAN I	J (all detects)

Method: 8270D
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
PCTss-006M-0001-SOMS PCTss-006M-0001-SOMSD (PCTss-006M-0001-SO)	BENZOIC ACID	0	0	10.00-89.00	-	BENZOIC ACID	J(all detects) UJ(all non-detects)

Method: 6010C
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
PCTss-006M-0001-SOMS (TOT) PCTss-006M-0001-SOMSD (TOT) (PCTss-006M-0001-SO)	ALUMINUM IRON	1593 1890	1399 1321	74.00-119.00 81.00-118.00	- -	ALUMINUM IRON	J(all detects)
PCTss-006M-0001-SOMS (TOT) PCTss-006M-0001-SOMSD (TOT) (PCTss-006M-0001-SO)	ANTIMONY MANGANESE	27 -197	26 -30	79.00-114.00 84.00-114.00	- -	ANTIMONY MANGANESE	J(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: **6010C**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 320-107757/1-A	4/28/2016 10:43:00 AM	ZINC	0.00771 mg/L	PCTss-006M-0001-ER

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
PCTss-006M-0001-ER(RES/TOT)	ZINC	0.0037 mg/L	0.0037U mg/L

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: GENCHEM

Method: 353.2 **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.48	U	0.48	CRDL	2.0	MRL	mg/L	R	StoA

Method Category: GENCHEM

Method: 353.2 **Matrix: SO**

Sample ID: PCTsb-001M-0001-SO **Collected:** 4/11/2016 4:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTsb-002M-0001-SO **Collected:** 4/12/2016 4:50:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTsb-003M-0001-SO **Collected:** 4/12/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTss-004M-0001-SO **Collected:** 4/13/2016 2:40:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.96	J	0.78	CRDL	5.0	MRL	mg/Kg	J	RI, StoA

Sample ID: PCTss-005M-0001-DS **Collected:** 4/13/2016 10:25:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: GENCHEM

Method: 353.2 **Matrix: SO**

Sample ID: PCTss-005M-0001-SO **Collected:** 4/13/2016 10:20:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.84	J	0.78	CRDL	5.0	MRL	mg/Kg	J	RI, StoA

Sample ID: PCTss-007M-0001-SO **Collected:** 4/13/2016 9:10:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.77	U	0.77	CRDL	5.0	MRL	mg/Kg	R	StoA

Sample ID: PCTss-008M-0001-SO **Collected:** 4/13/2016 8:30:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrocellulose	0.78	U	0.78	CRDL	5.0	MRL	mg/Kg	R	StoA

Method Category: GENCHEM

Method: 6850 **Matrix: SO**

Sample ID: PCTsb-001M-0001-SO **Collected:** 4/11/2016 4:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.41	J	0.15	CRDL	5.1	MRL	ug/Kg	J	RI

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.027	J	0.020	CRDL	0.10	MRL	mg/L	J	RI

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: METALS

Method: 6010C **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	0.31	J	0.25	CRDL	1.0	MRL	mg/L	J	Rl
ZINC	0.0037	J	0.0030	CRDL	0.020	MRL	mg/L	U	Mb

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES/TOT **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9700	D J	5.5	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.92	U J	0.92	CRDL	2.9	MRL	mg/Kg	R	Ms
CADMIUM	0.23	J D	0.029	CRDL	0.29	MRL	mg/Kg	J	Rl
IRON	15000	D J	2.0	CRDL	9.8	MRL	mg/Kg	J	Ms
MANGANESE	730	D J	0.25	CRDL	0.98	MRL	mg/Kg	J	Ms
SODIUM	41	J D	20	CRDL	98	MRL	mg/Kg	J	Rl

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
4,4'-DDD	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
4,4'-DDE	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
4,4'-DDT	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ALDRIN	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
ALPHA-BHC	0.0076	U	0.0076	CRDL	0.054	MRL	ug/L	UJ	StoE
ALPHA-CHLORDANE	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
BETA-BHC	0.0076	U	0.0076	CRDL	0.054	MRL	ug/L	UJ	StoE
DELTA-BHC	0.012	U	0.012	CRDL	0.054	MRL	ug/L	UJ	StoE
DIELDRIN	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDOSULFAN I	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: SVOA

Method: 8081B **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ENDOSULFAN II	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDOSULFAN SULFATE	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDRIN	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
ENDRIN ALDEHYDE	0.027	U	0.027	CRDL	0.11	MRL	ug/L	UJ	StoE
ENDRIN KETONE	0.022	U	0.022	CRDL	0.11	MRL	ug/L	UJ	StoE
gamma-BHC (Lindane)	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
GAMMA-CHLORDANE	0.013	U	0.013	CRDL	0.054	MRL	ug/L	UJ	StoE
HEPTACHLOR	0.0076	U	0.0076	CRDL	0.054	MRL	ug/L	UJ	StoE
HEPTACHLOR EPOXIDE	0.0065	U	0.0065	CRDL	0.054	MRL	ug/L	UJ	StoE
METHOXYCHLOR	0.046	U	0.046	CRDL	0.11	MRL	ug/L	UJ	StoE
TOXAPHENE	0.55	U	0.55	CRDL	2.2	MRL	ug/L	UJ	StoE

Method Category: SVOA

Method: 8081B **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALPHA-CHLORDANE	0.47	J	0.20	CRDL	1.7	MRL	ug/Kg	J	RI
DELTA-BHC	0.24	J	0.16	CRDL	1.7	MRL	ug/Kg	J	RI

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PCB-1016	0.098	U	0.098	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1221	0.12	U	0.12	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1232	0.18	U	0.18	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1242	0.13	U	0.13	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1248	0.11	U	0.11	CRDL	1.1	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: SVOA

Method: 8082A **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PCB-1254	0.11	U	0.11	CRDL	1.1	MRL	ug/L	UJ	StoE
PCB-1260	0.11	U	0.11	CRDL	1.1	MRL	ug/L	UJ	StoE

Method Category: SVOA

Method: 8270D **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Benzo[a]anthracene	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2,4,5-TRICHLOROPHENOL	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2,4,6-TRICHLOROPHENOL	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DICHLOROPHENOL	2.7	U	2.7	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DIMETHYLPHENOL	2.3	U	2.3	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DINITROPHENOL	21	U	21	CRDL	62	MRL	ug/L	UJ	StoE
2-CHLOROPHENOL	1.6	U	1.6	CRDL	10	MRL	ug/L	UJ	StoE
2-METHYLPHENOL	0.96	U	0.96	CRDL	10	MRL	ug/L	UJ	StoE
2-NITROPHENOL	2.0	U	2.0	CRDL	10	MRL	ug/L	UJ	StoE
3 & 4 Methylphenol	1.2	U	1.2	CRDL	10	MRL	ug/L	UJ	StoE
4,6-DINITRO-2-METHYLPHENOL	2.3	U	2.3	CRDL	62	MRL	ug/L	UJ	StoE
4-CHLORO-3-METHYLPHENOL	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
4-NITROPHENOL	6.3	U	6.3	CRDL	62	MRL	ug/L	UJ	StoE
BENZOIC ACID	21	U Q	21	CRDL	77	MRL	ug/L	R	Lcs, StoE
PENTACHLOROPHENOL	5.2	U	5.2	CRDL	62	MRL	ug/L	UJ	StoE
PHENOL	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: **SVOA**

Method: **8270D** ***Matrix:*** **AQ**

Sample ID: **PCTss-006M-0001-ER** ***Collected:*** **4/13/2016 12:30:00 PM** ***Analysis Type:*** **RES-BASE/NEUTRAL** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2,4-TRICHLOROBENZENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
1,2-DICHLOROBENZENE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
1,3-DICHLOROBENZENE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
1,4-DICHLOROBENZENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
2,4-DINITROTOLUENE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2,6-DINITROTOLUENE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
2-CHLORONAPHTHALENE	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
2-METHYLNAPHTHALENE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
2-NITROANILINE	2.1	U	2.1	CRDL	52	MRL	ug/L	UJ	StoE
3,3'-DICHLOROBENZIDINE	0.99	U	0.99	CRDL	52	MRL	ug/L	UJ	StoE
3-NITROANILINE	1.4	U	1.4	CRDL	52	MRL	ug/L	UJ	StoE
4-BROMOPHENYL PHENYL ETHER	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
4-CHLOROANILINE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
4-CHLOROPHENYL PHENYL ETHER	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
4-NITROANILINE	1.5	U	1.5	CRDL	52	MRL	ug/L	UJ	StoE
ACENAPHTHENE	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
ACENAPHTHYLENE	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
ANTHRACENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[a]pyrene	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[b]fluoranthene	1.2	U	1.2	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[g,h,i]perylene	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
Benzo[k]fluoranthene	0.99	U	0.99	CRDL	10	MRL	ug/L	UJ	StoE
BENZYL ALCOHOL	2.7	U	2.7	CRDL	10	MRL	ug/L	UJ	StoE
Bis (2-chloroisopropyl) ether	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
BIS(2-CHLOROETHOXY)METHANE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Bis(2-chloroethyl)ether	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
BIS(2-ETHYLHEXYL) PHTHALATE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
Butyl benzyl phthalate	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
CARBAZOLE	1.2	U	1.2	CRDL	10	MRL	ug/L	UJ	StoE
CHRYSENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
DIBENZ(A,H)ANTHRACENE	2.1	U	2.1	CRDL	10	MRL	ug/L	UJ	StoE
DIBENZOFURAN	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: SVOA

Method: 8270D **Matrix: AQ**

Sample ID: PCTss-006M-0001-ER **Collected:** 4/13/2016 12:30:00 PM **Analysis Type:** RES-BASE/NEUTRAL **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIETHYL PHTHALATE	0.96	U	0.96	CRDL	10	MRL	ug/L	UJ	StoE
DIMETHYL PHTHALATE	0.91	U	0.91	CRDL	10	MRL	ug/L	UJ	StoE
DI-N-BUTYL PHTHALATE	1.1	U	1.1	CRDL	10	MRL	ug/L	UJ	StoE
DI-N-OCTYL PHTHALATE	1.5	U	1.5	CRDL	10	MRL	ug/L	UJ	StoE
FLUORANTHENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
FLUORENE	0.96	U	0.96	CRDL	10	MRL	ug/L	UJ	StoE
HEXACHLOROBENZENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
HEXACHLOROBUTADIENE	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
HEXACHLOROCYCLOPENTADIENE	5.2	U	5.2	CRDL	52	MRL	ug/L	UJ	StoE
HEXACHLOROETHANE	1.4	U Q	1.4	CRDL	10	MRL	ug/L	UJ	Lcs, StoE
Indeno[1,2,3-cd]pyrene	3.5	U	3.5	CRDL	15	MRL	ug/L	UJ	StoE
ISOPHORONE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
NAPHTHALENE	1.3	U	1.3	CRDL	10	MRL	ug/L	UJ	StoE
NITROBENZENE	1.6	U	1.6	CRDL	10	MRL	ug/L	UJ	StoE
N-Nitrosodi-n-propylamine	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE
N-NITROSODIPHENYLAMINE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
PHENANTHRENE	1.0	U	1.0	CRDL	10	MRL	ug/L	UJ	StoE
PYRENE	1.4	U	1.4	CRDL	10	MRL	ug/L	UJ	StoE

Method Category: SVOA

Method: 8270D **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RES-ACID **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZOIC ACID	280	U J	280	CRDL	1600	MRL	ug/Kg	UJ	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: **VOA**

Method: **8260C** ***Matrix:*** **AQ**

Sample ID: **PCTss-006M-0001-ER** ***Collected:*** **4/13/2016 12:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHLOROFORM	0.20	J	0.12	CRDL	1.0	MRL	ug/L	J	RI

Sample ID: **PCTss-006M-0001-TB** ***Collected:*** **4/13/2016 8:00:00 AM** ***Analysis Type:*** **RE** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,1,1-TRICHLOROETHANE*	0.19	U H	0.19	CRDL	1.0	MRL	ug/L	UJ	StoA
1,1,2,2-TETRACHLOROETHANE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
1,1,2-TRICHLOROETHANE*	0.31	U H	0.31	CRDL	1.0	MRL	ug/L	UJ	StoA
1,1-DICHLOROETHANE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
1,1-DICHLOROETHENE*	0.14	U H	0.14	CRDL	1.0	MRL	ug/L	UJ	StoA
1,2-Dibromoethane (EDB)*	0.22	U H	0.22	CRDL	2.0	MRL	ug/L	UJ	StoA
1,2-DICHLOROETHANE*	0.22	U H	0.22	CRDL	1.0	MRL	ug/L	UJ	StoA
1,2-Dichloroethene, Total*	0.20	U H	0.20	CRDL	1.0	MRL	ug/L	UJ	StoA
1,2-DICHLOROPROPANE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
2-BUTANONE (MEK)*	0.53	J H	0.35	CRDL	2.0	MRL	ug/L	J	RI, StoA
2-HEXANONE*	0.17	U H	0.17	CRDL	2.0	MRL	ug/L	UJ	StoA
4-METHYL-2-PENTANONE (MIBK)*	0.18	U H	0.18	CRDL	2.0	MRL	ug/L	UJ	StoA
ACETONE	20	H	2.1	CRDL	10	MRL	ug/L	J	StoA
BENZENE*	0.13	U H	0.13	CRDL	1.0	MRL	ug/L	UJ	StoA
BROMOCHLOROMETHANE*	0.14	U H	0.14	CRDL	1.0	MRL	ug/L	UJ	StoA
BROMODICHLOROMETHANE*	0.14	U H	0.14	CRDL	1.0	MRL	ug/L	UJ	StoA
BROMOFORM*	0.10	U H	0.10	CRDL	1.0	MRL	ug/L	UJ	StoA
BROMOMETHANE*	0.29	U H	0.29	CRDL	1.0	MRL	ug/L	UJ	StoA
CARBON DISULFIDE*	0.16	U H	0.16	CRDL	2.0	MRL	ug/L	UJ	StoA
CARBON TETRACHLORIDE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
CHLOROBENZENE*	0.12	U H	0.12	CRDL	1.0	MRL	ug/L	UJ	StoA
CHLORODIBROMOMETHANE*	0.13	U H	0.13	CRDL	1.0	MRL	ug/L	UJ	StoA
CHLOROETHANE*	0.34	U H	0.34	CRDL	1.0	MRL	ug/L	UJ	StoA
CHLOROFORM*	0.12	U H	0.12	CRDL	1.0	MRL	ug/L	UJ	StoA
CHLOROMETHANE*	0.25	U H	0.25	CRDL	1.0	MRL	ug/L	UJ	StoA
CIS-1,2-DICHLOROETHENE*	0.10	U H	0.10	CRDL	1.0	MRL	ug/L	UJ	StoA
CIS-1,3-DICHLOROPROPENE*	0.22	U H	0.22	CRDL	1.0	MRL	ug/L	UJ	StoA

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: VOA

Method: 8260C **Matrix: AQ**

Sample ID: PCTss-006M-0001-TB **Collected:** 4/13/2016 8:00:00 AM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHYLBENZENE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
METHYLENE CHLORIDE*	4.6	H	0.35	CRDL	1.0	MRL	ug/L	J	StoA
m-Xylene & p-Xylene*	0.18	U H	0.18	CRDL	1.0	MRL	ug/L	UJ	StoA
O-XYLENE*	0.10	U H	0.10	CRDL	1.0	MRL	ug/L	UJ	StoA
STYRENE*	0.21	J H M	0.15	CRDL	1.0	MRL	ug/L	J	RI, StoA
TETRACHLOROETHENE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
TOLUENE*	0.25	U H	0.25	CRDL	1.0	MRL	ug/L	UJ	StoA
TRANS-1,2-DICHLOROETHENE*	0.11	U H	0.11	CRDL	1.0	MRL	ug/L	UJ	StoA
TRANS-1,3-DICHLOROPROPENE*	0.15	U H	0.15	CRDL	1.0	MRL	ug/L	UJ	StoA
TRICHLOROETHENE*	0.13	U H	0.13	CRDL	1.0	MRL	ug/L	UJ	StoA
VINYL CHLORIDE*	0.22	U H	0.22	CRDL	1.0	MRL	ug/L	UJ	StoA
Xylenes, Total*	0.18	U H	0.18	CRDL	1.5	MRL	ug/L	UJ	StoA

Sample ID: PCTss-006M-0001-TB **Collected:** 4/13/2016 8:00:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE*	7.8	J Q	2.1	CRDL	10	MRL	ug/L	J	RI
METHYLENE CHLORIDE	0.77	J	0.35	CRDL	1.0	MRL	ug/L	J	RI

Method Category: VOA

Method: 8260C **Matrix: SO**

Sample ID: PCTss-006M-0001-SO **Collected:** 4/13/2016 12:45:00 PM **Analysis Type:** RE **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,1-TRICHLOROETHANE*	0.52	U H	0.52	CRDL	7.2	MRL	ug/Kg	UJ	StoA
1,1,2,2-TETRACHLOROETHANE*	0.98	U H	0.98	CRDL	7.2	MRL	ug/Kg	UJ	StoA
1,1,2-TRICHLOROETHANE*	0.63	U H	0.63	CRDL	7.2	MRL	ug/Kg	UJ	StoA
1,1-DICHLOROETHANE*	0.42	U H	0.42	CRDL	7.2	MRL	ug/Kg	UJ	StoA
1,1-DICHLOROETHENE*	0.37	U H	0.37	CRDL	7.2	MRL	ug/Kg	UJ	StoA
1,2-Dibromoethane (EDB)*	0.39	U H	0.39	CRDL	14	MRL	ug/Kg	UJ	StoA
1,2-DICHLOROETHANE*	1.0	U H	1.0	CRDL	7.2	MRL	ug/Kg	UJ	StoA

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: **VOA**

Method: **8260C** ***Matrix:*** **SO**

Sample ID: **PCTss-006M-0001-SO** ***Collected:*** **4/13/2016 12:45:00 PM** ***Analysis Type:*** **RE** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2-Dichloroethene, Total*	1.3	U H	1.3	CRDL	7.2	MRL	ug/Kg	UJ	StoA
1,2-DICHLOROPROPANE*	0.86	U H	0.86	CRDL	7.2	MRL	ug/Kg	UJ	StoA
2-BUTANONE (MEK)*	2.0	U H	2.0	CRDL	14	MRL	ug/Kg	UJ	StoA
2-HEXANONE*	1.1	U H	1.1	CRDL	14	MRL	ug/Kg	UJ	StoA
4-METHYL-2-PENTANONE (MIBK)*	1.3	U H	1.3	CRDL	14	MRL	ug/Kg	UJ	StoA
ACETONE*	24	J H	2.0	CRDL	29	MRL	ug/Kg	UJ	StoA, Tb
BENZENE*	0.37	U H	0.37	CRDL	7.2	MRL	ug/Kg	UJ	StoA
BROMOCHLOROMETHANE*	1.4	U H	1.4	CRDL	7.2	MRL	ug/Kg	UJ	StoA
BROMODICHLOROMETHANE*	0.76	U H	0.76	CRDL	7.2	MRL	ug/Kg	UJ	StoA
BROMOFORM*	0.58	U H	0.58	CRDL	7.2	MRL	ug/Kg	UJ	StoA
BROMOMETHANE*	1.2	U H	1.2	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CARBON DISULFIDE*	0.70	U H	0.70	CRDL	14	MRL	ug/Kg	UJ	StoA
CARBON TETRACHLORIDE*	0.76	U H	0.76	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CHLOROBENZENE*	0.42	U H	0.42	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CHLORODIBROMOMETHANE*	0.37	U H	0.37	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CHLOROETHANE*	0.65	U H	0.65	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CHLOROFORM*	0.37	U H	0.37	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CHLOROMETHANE*	0.72	U H	0.72	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CIS-1,2-DICHLOROETHENE*	1.3	U H	1.3	CRDL	7.2	MRL	ug/Kg	UJ	StoA
CIS-1,3-DICHLOROPROPENE*	0.92	U H	0.92	CRDL	7.2	MRL	ug/Kg	UJ	StoA
ETHYLBENZENE*	0.49	U H	0.49	CRDL	7.2	MRL	ug/Kg	UJ	StoA
METHYLENE CHLORIDE*	1.2	U H	1.2	CRDL	7.2	MRL	ug/Kg	UJ	StoA
m-Xylene & p-Xylene*	1.2	U H	1.2	CRDL	7.2	MRL	ug/Kg	UJ	StoA
O-XYLENE*	0.47	U H	0.47	CRDL	7.2	MRL	ug/Kg	UJ	StoA
STYRENE*	0.45	U H	0.45	CRDL	7.2	MRL	ug/Kg	UJ	StoA
TETRACHLOROETHENE*	0.88	U H	0.88	CRDL	7.2	MRL	ug/Kg	UJ	StoA
TOLUENE*	0.88	U H	0.88	CRDL	7.2	MRL	ug/Kg	UJ	StoA
TRANS-1,2-DICHLOROETHENE*	0.55	U H	0.55	CRDL	7.2	MRL	ug/Kg	UJ	StoA
TRANS-1,3-DICHLOROPROPENE*	1.1	U H	1.1	CRDL	7.2	MRL	ug/Kg	UJ	StoA
TRICHLOROETHENE*	0.86	U H	0.86	CRDL	7.2	MRL	ug/Kg	UJ	StoA
VINYL CHLORIDE*	0.52	U H	0.52	CRDL	7.2	MRL	ug/Kg	UJ	StoA
Xylenes, Total*	1.2	U H	1.2	CRDL	7.2	MRL	ug/Kg	UJ	StoA

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method Category: **VOA**

Method: **8260C** ***Matrix:*** **SO**

Sample ID: **PCTss-006M-0001-SO** ***Collected:*** **4/13/2016 12:45:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ACETONE	8.3	J	2.0	CRDL	28	MRL	ug/Kg	U	Tb

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Reason Code Legend

Reason Code	*Description*
Lcs	Laboratory Control Precision
Lcs	Laboratory Control Spike Lower Rejection
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Estimation
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Precision
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value
StoA	Sampling to Analysis Estimation
StoA	Sampling to Analysis Rejection
StoE	Sampling to Extraction Estimation
Surr	Surrogate/Tracer Recovery Upper Estimation
Tb	Trip Blank Contamination

* denotes a non-reportable result

Reporting Limit Outliers

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: 6010C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTss-006M-0001-ER	IRON	J	0.027	0.10	MRL	mg/L	J (all detects)
	SODIUM	J	0.31	1.0	MRL	mg/L	
	ZINC	J	0.0037	0.020	MRL	mg/L	

Method: 8260C
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTss-006M-0001-ER	CHLOROFORM	J	0.20	1.0	MRL	ug/L	J (all detects)
PCTss-006M-0001-TB	2-BUTANONE (MEK)	J H	0.53	2.0	MRL	ug/L	J (all detects)
	ACETONE	J Q	7.8	10	MRL	ug/L	
	METHYLENE CHLORIDE	J	0.77	1.0	MRL	ug/L	
	STYRENE	J H M	0.21	1.0	MRL	ug/L	

Method: 353.2
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTss-004M-0001-SO	Nitrocellulose	J	0.96	5.0	MRL	mg/Kg	J (all detects)
PCTss-006M-0001-SO	Nitrocellulose	J	0.84	5.0	MRL	mg/Kg	J (all detects)

Method: 6010C
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTss-006M-0001-SO	CADMIUM	J D	0.23	0.29	MRL	mg/Kg	J (all detects)
	SODIUM	J D	41	98	MRL	mg/Kg	

Method: 6850
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTsb-001M-0001-SO	PERCHLORATE	J	0.41	5.1	MRL	ug/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: 8081B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTss-006M-0001-SO	ALPHA-CHLORDANE	J	0.47	1.7	MRL	ug/Kg	J (all detects)
	DELTA-BHC	J	0.24	1.7	MRL	ug/Kg	

Method: 8260C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTss-006M-0001-SO	ACETONE	J H	24	29	MRL	ug/Kg	J (all detects)

Trip Blank Outlier Report

Lab Reporting Batch ID: 320-18324-1 **Laboratory: TA SAC**

EDD Filename: 320-18324-1 **eQAPP Name: Pika_Ravenna_05012016**

Method: **8260C**
Matrix: **SO**

Trip Blank Sample ID	Collected Date	Analyte	Result	Associated Samples
PCTss-006M-0001-TB(RE)	4/13/2016 8:00:00 AM	2-BUTANONE (MEK) ACETONE METHYLENE CHLORIDE STYRENE	0.53 ug/L 20 ug/L 4.6 ug/L 0.21 ug/L	PCTsb-001M-0001-SO PCTsb-002M-0001-SO PCTsb-003M-0001-SO PCTss-004M-0001-SO PCTss-005M-0001-DS PCTss-005M-0001-SO PCTss-006M-0001-ER PCTss-006M-0001-SO PCTss-007M-0001-SO PCTss-008M-0001-SO
PCTss-006M-0001-TB (RES)	4/13/2016 8:00:00 AM	ACETONE METHYLENE CHLORIDE	7.8 ug/L 0.77 ug/L	PCTsb-001M-0001-SO PCTsb-002M-0001-SO PCTsb-003M-0001-SO PCTss-004M-0001-SO PCTss-005M-0001-DS PCTss-005M-0001-SO PCTss-006M-0001-ER PCTss-006M-0001-SO PCTss-007M-0001-SO PCTss-008M-0001-SO

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
PCTss-006M-0001-SO(RES)	ACETONE	8.3 ug/Kg	8.3U ug/Kg

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops

Field QC Assignments and Associated Samples

EDD File Name: 320-18324-2

eQapp Name: Pika_Ravenna_05012016a

	Associated Samples	Sample Collection Date
Field QC Sample: PCTss-005M-0001-DS **QC Type:** FD		
	PCTss-005M-0001-SO	4/13/2016 10:20:00 AM

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **SO**

Sample ID: **PCTsb-001M-0001-SO** ***Collected:*** **4/11/2016 4:45:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.95	U	0.95	CRDL	3.0	MRL	mg/Kg	R	Ms
ARSENIC	2.7	J D	1.3	CRDL	4.0	MRL	mg/Kg	J	Rl
BERYLLIUM	0.22	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
CADMIUM	0.043	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
IRON	8100	D	2.0	CRDL	10	MRL	mg/Kg	J	Ms
MANGANESE	56	D	0.25	CRDL	1.0	MRL	mg/Kg	J	Ms
SILVER	0.13	J D	0.091	CRDL	0.50	MRL	mg/Kg	U	Mb
SODIUM	21	J D	20	CRDL	100	MRL	mg/Kg	J	Rl
ALUMINUM	6300	D	5.6	CRDL	20	MRL	mg/Kg	J	Ms

Sample ID: **PCTsb-002M-0001-SO** ***Collected:*** **4/12/2016 4:50:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	11000	D	5.5	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.93	U	0.93	CRDL	3.0	MRL	mg/Kg	R	Ms
IRON	22000	D	2.0	CRDL	9.9	MRL	mg/Kg	J	Ms
MANGANESE	330	D	0.25	CRDL	0.99	MRL	mg/Kg	J	Ms
SILVER	0.15	J D	0.089	CRDL	0.49	MRL	mg/Kg	U	Mb
SODIUM	36	J D	20	CRDL	99	MRL	mg/Kg	J	Rl

Sample ID: **PCTsb-003M-0001-SO** ***Collected:*** **4/12/2016 12:30:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	8100	J D	5.6	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.94	U J	0.94	CRDL	3.0	MRL	mg/Kg	R	Ms
CADMIUM	0.081	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
IRON	17000	J D	2.0	CRDL	10	MRL	mg/Kg	J	Ms
MANGANESE	490	J D	0.25	CRDL	1.0	MRL	mg/Kg	J	Ms
SILVER	0.18	J D	0.090	CRDL	0.50	MRL	mg/Kg	U	Mb
SODIUM	30	J D	20	CRDL	100	MRL	mg/Kg	J	Rl

Sample ID: **PCTss-004M-0001-SO** ***Collected:*** **4/13/2016 2:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	11000	D	5.7	CRDL	20	MRL	mg/Kg	J	Ms

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method Category: **METALS**

Method: **6010C** ***Matrix:*** **SO**

Sample ID: **PCTss-004M-0001-SO** ***Collected:*** **4/13/2016 2:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.95	U	0.95	CRDL	3.0	MRL	mg/Kg	R	Ms
CADMIUM	0.21	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
IRON	21000	D	2.0	CRDL	10	MRL	mg/Kg	J	Ms
MANGANESE	420	D	0.25	CRDL	1.0	MRL	mg/Kg	J	Ms
SILVER	0.19	J D	0.091	CRDL	0.50	MRL	mg/Kg	U	Mb
SODIUM	36	J D	20	CRDL	100	MRL	mg/Kg	J	Rl

Sample ID: **PCTss-005M-0001-DS** ***Collected:*** **4/13/2016 10:25:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	7900	D	5.5	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.93	U	0.93	CRDL	3.0	MRL	mg/Kg	R	Ms
CADMIUM	0.10	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
IRON	13000	D	2.0	CRDL	9.9	MRL	mg/Kg	J	Ms
MANGANESE	440	D	0.25	CRDL	0.99	MRL	mg/Kg	J	Ms
SILVER	0.31	J D	0.089	CRDL	0.49	MRL	mg/Kg	U	Mb
SODIUM	21	J D	20	CRDL	99	MRL	mg/Kg	J	Rl

Sample ID: **PCTss-005M-0001-SO** ***Collected:*** **4/13/2016 10:20:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	7800	D	5.6	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.93	U	0.93	CRDL	3.0	MRL	mg/Kg	R	Ms
CADMIUM	0.11	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
IRON	13000	D	2.0	CRDL	9.9	MRL	mg/Kg	J	Ms
MANGANESE	460	D	0.25	CRDL	0.99	MRL	mg/Kg	J	Ms
SILVER	0.25	J D	0.089	CRDL	0.50	MRL	mg/Kg	U	Mb
SODIUM	21	J D	20	CRDL	99	MRL	mg/Kg	J	Rl

Sample ID: **PCTss-007M-0001-SO** ***Collected:*** **4/13/2016 9:10:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	9100	D	5.7	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.96	U	0.96	CRDL	3.1	MRL	mg/Kg	R	Ms
CADMIUM	0.13	J D	0.031	CRDL	0.31	MRL	mg/Kg	J	Rl

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method Category: METALS

Method: 6010C **Matrix: SO**

Sample ID: PCTss-007M-0001-SO **Collected:** 4/13/2016 9:10:00 AM **Analysis Type:** RES/TOT **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	15000	D	2.0	CRDL	10	MRL	mg/Kg	J	Ms
MANGANESE	570	D	0.25	CRDL	1.0	MRL	mg/Kg	J	Ms
SILVER	0.29	J D	0.092	CRDL	0.51	MRL	mg/Kg	U	Mb
SODIUM	22	J D	20	CRDL	100	MRL	mg/Kg	J	Rl

Sample ID: PCTss-008M-0001-SO **Collected:** 4/13/2016 8:30:00 AM **Analysis Type:** RES/TOT **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ALUMINUM	7900	D	5.6	CRDL	20	MRL	mg/Kg	J	Ms
ANTIMONY	0.94	U	0.94	CRDL	3.0	MRL	mg/Kg	R	Ms
CADMIUM	0.15	J D	0.030	CRDL	0.30	MRL	mg/Kg	J	Rl
IRON	13000	D	2.0	CRDL	10	MRL	mg/Kg	J	Ms
MANGANESE	500	D	0.25	CRDL	1.0	MRL	mg/Kg	J	Ms
SILVER	0.20	J D	0.090	CRDL	0.50	MRL	mg/Kg	U	Mb
SODIUM	22	J D	20	CRDL	100	MRL	mg/Kg	J	Rl

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: PCTsb-001M-0001-SO **Collected:** 4/11/2016 4:45:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.015	J H	0.0051	CRDL	0.024	MRL	mg/Kg	J	Rl, StoA

Sample ID: PCTsb-002M-0001-SO **Collected:** 4/12/2016 4:50:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.020	J H	0.0051	CRDL	0.024	MRL	mg/Kg	J	Rl, StoA

Sample ID: PCTsb-003M-0001-SO **Collected:** 4/12/2016 12:30:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.023	J H	0.0052	CRDL	0.024	MRL	mg/Kg	J	Rl, StoA

* denotes a non-reportable result

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at Ravenna AAP

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **PCTss-004M-0001-SO** ***Collected:*** **4/13/2016 2:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.038	H	0.0051	CRDL	0.024	MRL	mg/Kg	J	StoA

Sample ID: **PCTss-005M-0001-DS** ***Collected:*** **4/13/2016 10:25:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.038	H	0.0051	CRDL	0.024	MRL	mg/Kg	J	StoA

Sample ID: **PCTss-005M-0001-SO** ***Collected:*** **4/13/2016 10:20:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.035	H	0.0051	CRDL	0.024	MRL	mg/Kg	J	StoA

Sample ID: **PCTss-007M-0001-SO** ***Collected:*** **4/13/2016 9:10:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.039	H	0.0052	CRDL	0.024	MRL	mg/Kg	J	StoA

Sample ID: **PCTss-008M-0001-SO** ***Collected:*** **4/13/2016 8:30:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.040	H	0.0052	CRDL	0.024	MRL	mg/Kg	J	StoA

* denotes a non-reportable result

Data Qualifier Summary

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Reason Code Legend

Reason Code	*Description*
Mb	Method Blank Contamination
Ms	Matrix Spike Lower Rejection
Ms	Matrix Spike Upper Estimation
RI	Reporting Limit Trace Value
StoA	Sampling to Analysis Rejection

* denotes a non-reportable result

Data Review Summary

Lab Reporting Batch ID: 320-18324-2
Laboratory: TA SAC
EDD Filename: 320-18324-2
eQAPP Name: Pika_Ravenna_05012016a

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method: 6010C
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	PCTss-005M-0001-SO (TOT)	PCTss-005M-0001-DS (TOT)			
ALUMINUM	7800	7900	1	50.00	
ARSENIC	7.4	7.6	3	50.00	
BARIUM	49	49	0	50.00	
BERYLLIUM	0.31	0.30	3	50.00	
CADMIUM	0.11	0.10	10	50.00	
CALCIUM	280	340	19	50.00	
CHROMIUM	11	10	10	50.00	
COBALT	6.0	5.9	2	50.00	
COPPER	9.8	9.4	4	50.00	
IRON	13000	13000	0	50.00	No Qualifiers Applied
LEAD	27	27	0	50.00	
MAGNESIUM	1300	1300	0	50.00	
MANGANESE	460	440	4	50.00	
NICKEL	11	11	0	50.00	
POTASSIUM	470	470	0	50.00	
SILVER	0.25	0.31	21	50.00	
SODIUM	21	21	0	50.00	
VANADIUM	13	13	0	50.00	
ZINC	50	50	0	50.00	

Method: 7471A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	PCTss-005M-0001-SO (TOT)	PCTss-005M-0001-DS (TOT)			
MERCURY	0.035	0.038	8	50.00	No Qualifiers Applied

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area at

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**
EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method: 7471A **Preparation Method: 7471A**
Matrix: SO

Sample ID	Type	Actual	Criteria	Units	Flag
PCTsb-001M-0001-SO (RES/TOT)	Sampling To Analysis	72.00	28.00	DAYS	J (all detects)
PCTsb-002M-0001-SO (RES/TOT)		71.00	28.00	DAYS	R (all non-detects)
PCTsb-003M-0001-SO (RES/TOT)		71.00	28.00	DAYS	
PCTsb-003M-0001-SOMS (RES/TOT)		71.00	28.00	DAYS	
PCTsb-003M-0001-SOMSD (RES/TOT		71.00	28.00	DAYS	
PCTss-004M-0001-SO (RES/TOT)		70.00	28.00	DAYS	
PCTss-005M-0001-DS (RES/TOT)		70.00	28.00	DAYS	
PCTss-005M-0001-SO (RES/TOT)		70.00	28.00	DAYS	
PCTss-007M-0001-SO (RES/TOT)		70.00	28.00	DAYS	
PCTss-008M-0001-SO (RES/TOT)		70.00	28.00	DAYS	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method: **6010C**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
PCTsb-003M-0001-SOMS (TOT) PCTsb-003M-0001-SOMSD (TOT) (PCTsb-001M-0001-SO PCTsb-002M-0001-SO PCTsb-003M-0001-SO PCTss-004M-0001-SO PCTss-005M-0001-DS PCTss-005M-0001-SO PCTss-007M-0001-SO PCTss-008M-0001-SO)	ALUMINUM IRON MANGANESE	1126 308 149	1141 489 134	74.00-119.00 81.00-118.00 84.00-114.00	- - -	ALUMINUM IRON MANGANESE	J (all detects)
PCTsb-003M-0001-SOMS (TOT) PCTsb-003M-0001-SOMSD (TOT) (PCTsb-001M-0001-SO PCTsb-002M-0001-SO PCTsb-003M-0001-SO PCTss-004M-0001-SO PCTss-005M-0001-DS PCTss-005M-0001-SO PCTss-007M-0001-SO PCTss-008M-0001-SO)	ANTIMONY	19	21	79.00-114.00	-	ANTIMONY	J(all detects) R(all non-detects)

Project Name and Number: W912QR-12-F-0212 - Site CC RVAAP-80 Group 2 Propellant Can Tops Area

Method Blank Outlier Report

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method: **6010C**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 320-115129/1-A	6/25/2016 10:48:00 AM	SILVER	0.114 mg/Kg	PCTsb-001M-0001-SO PCTsb-002M-0001-SO PCTsb-003M-0001-SO PCTss-004M-0001-SO PCTss-005M-0001-DS PCTss-005M-0001-SO PCTss-007M-0001-SO PCTss-008M-0001-SO

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
PCTsb-001M-0001-SO(RES/TOT)	SILVER	0.13 mg/Kg	0.13U mg/Kg
PCTsb-002M-0001-SO(RES/TOT)	SILVER	0.15 mg/Kg	0.15U mg/Kg
PCTsb-003M-0001-SO(RES/TOT)	SILVER	0.18 mg/Kg	0.18U mg/Kg
PCTss-004M-0001-SO(RES/TOT)	SILVER	0.19 mg/Kg	0.19U mg/Kg
PCTss-005M-0001-DS(RES/TOT)	SILVER	0.31 mg/Kg	0.31U mg/Kg
PCTss-005M-0001-SO(RES/TOT)	SILVER	0.25 mg/Kg	0.25U mg/Kg
PCTss-007M-0001-SO(RES/TOT)	SILVER	0.29 mg/Kg	0.29U mg/Kg
PCTss-008M-0001-SO(RES/TOT)	SILVER	0.20 mg/Kg	0.20U mg/Kg

Reporting Limit Outliers

Lab Reporting Batch ID: 320-18324-2 **Laboratory: TA SAC**

EDD Filename: 320-18324-2 **eQAPP Name: Pika_Ravenna_05012016a**

Method: 6010C

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTsb-001M-0001-SO	ARSENIC	J D	2.7	4.0	MRL	mg/Kg	
	BERYLLIUM	J D	0.22	0.30	MRL	mg/Kg	
	CADMIUM	J D	0.043	0.30	MRL	mg/Kg	J (all detects)
	SILVER	J D	0.13	0.50	MRL	mg/Kg	
	SODIUM	J D	21	100	MRL	mg/Kg	
PCTsb-002M-0001-SO	SILVER	J D	0.15	0.49	MRL	mg/Kg	J (all detects)
	SODIUM	J D	36	99	MRL	mg/Kg	
PCTsb-003M-0001-SO	CADMIUM	J D	0.081	0.30	MRL	mg/Kg	
	SILVER	J D	0.18	0.50	MRL	mg/Kg	J (all detects)
	SODIUM	J D	30	100	MRL	mg/Kg	
PCTss-004M-0001-SO	CADMIUM	J D	0.21	0.30	MRL	mg/Kg	
	SILVER	J D	0.19	0.50	MRL	mg/Kg	J (all detects)
	SODIUM	J D	36	100	MRL	mg/Kg	
PCTss-005M-0001-DS	CADMIUM	J D	0.10	0.30	MRL	mg/Kg	
	SILVER	J D	0.31	0.49	MRL	mg/Kg	J (all detects)
	SODIUM	J D	21	99	MRL	mg/Kg	
PCTss-005M-0001-SO	CADMIUM	J D	0.11	0.30	MRL	mg/Kg	
	SILVER	J D	0.25	0.50	MRL	mg/Kg	J (all detects)
	SODIUM	J D	21	99	MRL	mg/Kg	
PCTss-007M-0001-SO	CADMIUM	J D	0.13	0.31	MRL	mg/Kg	
	SILVER	J D	0.29	0.51	MRL	mg/Kg	J (all detects)
	SODIUM	J D	22	100	MRL	mg/Kg	
PCTss-008M-0001-SO	CADMIUM	J D	0.15	0.30	MRL	mg/Kg	
	SILVER	J D	0.20	0.50	MRL	mg/Kg	J (all detects)
	SODIUM	J D	22	100	MRL	mg/Kg	

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
PCTsb-001M-0001-SO	MERCURY	J H	0.015	0.024	MRL	mg/Kg	J (all detects)
PCTsb-002M-0001-SO	MERCURY	J H	0.020	0.024	MRL	mg/Kg	J (all detects)
PCTsb-003M-0001-SO	MERCURY	J H	0.023	0.024	MRL	mg/Kg	J (all detects)

Data Validation Report For PIKA International, Inc.

Date: 10/27/16 Rev D
Project: RAVENNA PO# 1208157-009
Project LAB #: 320-18324-1 and 320-18324-2
Laboratory: Test America (Various)

Prepared By:

Signed: 
William W. Purves

Table of Contents

1.0 Introduction

This Data Validation Report (DVR) details the assessment and validation of analytical data generated for samples collected by PIKA during field activities at the Ravenna Army Arsenal, Ravenna Ohio, PIKA Project # 1208157-009. The laboratories subcontracted for the chemical analysis of the soil and water samples were various Test America facilities. The laboratories are ELAP accredited.

This report is the accumulation of all the laboratory reports/project numbers into one document. The samples evaluated in this report were sampled April 11-13, 2016. All samples were delivered to TestAmerica in Canton, Ohio on April 14, 2016 and forwarded to ELAP certified TestAmerica Sacramento for analysis. Analytical results of the samples are provided by the ADR and not provided in this report. The professional judgment of the data and qualifiers used and/or changed by the data validator are presented under each method. An overview of the validation findings is presented in tabular form in Appendix A Appendix B contains all the check lists that were used in the validation effort. The methods are provided in the list following this paragraph:

Volatile Organic Compounds via USEPA Method 8260B
Semi-Volatile Organic Compounds via USEPA Method 8270C
Pesticides via USEPA Method 8081A
Poly Chlorinated Biphenyls via USEPA Method 8082
Explosives via USEPA Method 8330
Nitroglycerine via USEPA Method 8330
Nitroguanidine (propellant) via USEPA Method 8330 Modified
Perchlorate via USEPA Method 6860
Metals excluding Mercury via USEPA Methods 6010B and 6010B (trace)
Mercury by USEPA Methods 7470A (water) and 7471A (soil)
Nitrocellulose (propellant) via USEPA Methods 3532
Percent Solids via USEPA Method 160.3

All sample results were systematically verified using the ADR software (Level II Validation) followed by a Level IV validation by Purves Environmental in Hudson, OH in accordance with the project specified QAAP, DOD QSM, National Functional Guidelines for Data Validation and USEPA SW-846 Test Methods for Evaluating Solid Waste. A completeness review of 100% of the package was performed. One water sample (PCTss-006M-0001-ER, Equipment Rinse) and one soil sample (PCT ss-006M-0001-SO) were fully validated (complete reconstruction) to meet the project objective of Level IV validation of ten percent of the data. This validation includes all QA/QC data, calibration curves for ten percent of the compound listed, and any data where calibration or QA/QC data indicated an issue. The soil samples were evaluated and checked separately from the equipment rinse sample.

1.1 Sample Data Selection Criteria

All the QA/QC data was reviewed for the samples in all project numbers based upon the following criteria.

Flagging Criteria: All samples that had R, J, H, and M flags were checked.

As the QA/QC data was reviewed, all samples that were affected by any QA/QC outlier was isolated and reviewed. Ten Percent (10%) of the samples were then reviewed. Due to the small sample group, only one soil and water was available for full evaluation.

The of the data was validated in accordance with the analytical methods and the documents entitled:

Project Specified QAAP
The DOD QSM
National Functional Guidelines for Data Validation
USEPA Test Methods for evaluating Solid Waste SW-846

All data is computer generated and has been consistent. The data package used by Test America is an industry standard and re-calculation consistently demonstrates that there are no issues with the data in terms of accuracy of the calculations. Calculations that may be generated by hand was be checked. However, the computer data generation systems used by Test America are 100% accurate based upon the input. **The only time that data validation issues arise is when the calibration, QA or QC does not meet established criteria and sample data is generated and reported within the outlying criteria.**

The results of the data validation are presented in the following subsections.

Section 2.0 Quality Control Results
Section 3.0 QC Summary
Section 4.0 References
Appendix A

2.0 Quality Control Results

This section provides a summary of the laboratory QC results, which were used to meet the project data quality objectives (DQOs) for the investigation. The section below outlines what parts of each method were checked and a brief statement is provided where issues may occur.

2.1 All organic data utilizes the same validation flagging letters.
J= Estimated Value (used primarily when the result is below the reporting limit (RL) but above the detection limit (DL)), otherwise, when QA/QCs are out of range but the sample result is above the reporting limit.
R= Rejected (used when calibrations and QA/QCs fail) often used per analyte when multiple compounds or elements are analyzed by the same method.

2.1.1 Metals Data Soils ICP Method 6010B and 6010B (trace) Soil, and Water.

Test America uses a J Flag as and estimated value for blank results that are greater than the Method Detection Limit (MDL) and below the Reporting Limit (RL) or Method Reporting Limit (MRL). The J flag is also used for data that is considered estimated for other quality control reasons as well. All data that was J

flagged was reviewed by the data validator and an evaluation provided in the summary. All changes in flags by the data validator are fully explained.

2.1.2 Flag Removal

2.1.2.1 All estimated data generated for all organic and general chemistry are valid and should remain.

2.1.2.2 Results for aluminum, iron, and manganese by Method 6010B were more than 4 times greater than the spike concentration. All estimated results for aluminum, iron, and manganese by due to low MS/MSD recovery were removed because the spiking criteria were not met.

2.2 Method 8260B Volatile Organic Compounds (Water)

2.2.1 Initial Calibration
All method requirements were met for all data generated.

2.2.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits. The LCS/LCS Dup also substituted for the sample dup and all Relative Percent Differences passed.

2.2.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits except Acetone as described in the case narrative. This issue is normally due to acetone as a laboratory contaminant and it is the professional judgment that the sample is not affected by the contaminant.

2.2.4 Matrix Spike and Matrix Spike Duplicate Analysis
Not enough sample was provided for a MS/MSD analysis.

2.2.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.2.6 Method Blank
All the blanks were below the reporting limit for water. Acetone was detected in the method blank but well below the reporting limit. Acetone is a common contaminant in the organic laboratory.

2.2.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.2.8 Surrogates
All surrogates met method criteria

2.2.9 Internal Standards
All Internal Standards met method limits.

2.2.10 Tuning
Tuning requirements for the method were met.

2.2.11 SPCC Check
The SPCC Check met all method requirements.

2.2.12 Holding Time
The holding time for this sample was met.

2.2.13 Relative Retention Times
All relative retention times and retention time windows met method requirements.

2.3 Method 8260B Volatile Organic Compounds (Soil)

2.3.1 Initial Calibration
All method requirements were met for all data generated.

2.3.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered within the method limits. The LCS Dup was also within method limits. The LCS/LCS Dup also substituted for the sample dup and all Relative Percent Differences passed.

2.3.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.3.4 Matrix Spike and Matrix Spike Duplicate Analysis
MS/MSD was not analyzed on a project sample. Per the laboratory narrative, “insufficient sample volume was provided to perform a matrix spike and matrix spike duplicate”. This statement was provided for both analytical batches.

2.3.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.3.6 Method Blank

All the blanks were below the reporting limit for water. Acetone was detected in the method blank but well below the reporting limit. Acetone is a common contaminant in the organic laboratory.

2.3.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.3.8 Surrogates
All surrogates met method criteria.

2.3.9 Internal Standards
All Internal Standards met method criteria.

2.3.10 Tuning
Tuning requirements for the method were met.

2.3.11 SPCC Check
The SPCC Check met all method requirements.

2.3.12 MRL Sequence Analysis
The MRL Analysis met method requirements

2.3.13 Holding Time
The holding time for this sample was met.

2.3.14 Relative Retention Times
All relative retention times and retention time windows met method requirements.

2.4 Method 8270C Semi-Volatile Organic Compounds (Water)

2.4.1 Initial Calibration
All method requirements were met for all data generated.

2.4.2 Laboratory Control Sample (LCS)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits. The LCS/LCS Dup also substituted for the sample dup and all Relative Percent Differences passed. Benzoic Acid did not meet method requirements; however, Benzoic Acid is a poor chromatographic compound and has no effect on the non-detect data. The %RPD for Hexachloroethane did not affect sample data.

2.4.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.4.4 Matrix Spike and Matrix Spike Duplicate Analysis
Not enough sample was provided for a MS/MSD analysis.

2.4.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.4.6 Method Blank
All the blanks were below the reporting limit for water.

2.4.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.4.8 Surrogates
All surrogates met method limits.

2.4.9 Internal Standards
All Internal Standards met method guidelines.

2.4.10 Tuning
Tuning requirements for the method were met.

2.4.11 SPCC Check
The SPCC Check met all method requirements.

2.4.12 MRL Standard
The MRL met method requirements.

2.4.13 Holding Time
Sample PCTss-006M-0001-SO was analyzed for the RVAAP full suite. Holding times were met except for re-extraction for Benzoic Acid to verify the low MS/MSD recoveries. No other issues were found.

2.4.14 Relative Retention Times
All relative retention times and retention time windows met method requirements.

2.5 Method 8270C Semi-Volatile Organic Compounds (Soil)

2.5.1 Initial Calibration
All method requirements were met for all data generated.

2.5.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered within the method limits. The LCS Dup was also within

method limits. The LCS/LCS Dup also substituted for the sample dup and all Relative Percent Differences passed.

2.5.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.5.4 Matrix Spike and Matrix Spike Duplicate Analysis
The MS/MSD recovery for Benzoic Acid was low for both the MS and MSD. Reference to multiple compounds in the narrative was incorrect as they were samples that were not part of the Ravenna sample group. No additional measures were taken to verify the reason for the low recovery thus the MS/MSD recovery. The flag stands for the Benzoic Acid.

2.5.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.5.6 Method Blank
All the blanks were below the reporting limit for water.

2.5.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.5.8 Surrogates
All surrogates met method limits.

2.5.9 Internal Standards
All Internal Standards met method guidelines.

2.5.10 Tuning
Tuning requirements for the method were met.

2.5.11 SPCC Check
The SPCC Check met all method requirements.

2.5.12 MRL Standard
The MRL met method requirements.

2.5.13 Holding Time
The holding times for the samples were met.

2.5.14 Relative Retention Times
All relative retention times and retention time windows met method requirements.

2.6 Method 8081A Pesticides (Water)
The validation reviewed only those compounds of concern.

2.6.1 Initial Calibration
All method requirements were met for all data generated.

2.6.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits and all Relative Percent Differences passed.

2.6.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.6.4 Matrix Spike and Matrix Spike Duplicate Analysis
There was insufficient sample to run the MS/MSD.

2.6.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met for most compounds

2.6.6 Method Blank
All the blanks were below the reporting limit for water.

2.6.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.6.8 Surrogates
All surrogates met method guidelines.

2.6.9 Holding Time
Holding times for extraction were met.

2.6.10 Endrin and 4,4'-DDT Breakdown
All breakdown analysis passed method requirements.

2.6.11 Retention Times
All retention times and retention time windows met method requirements.

2.6.12 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.7 Method 8081A Pesticides (Soil)

The validation reviewed only those compounds of concern.

2.7.1 Initial Calibration
All method requirements were met for all data generated.

2.7.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits and all Relative Percent Differences passed.

2.7.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.7.4 Matrix Spike and Matrix Spike Duplicate Analysis
The MS/MSD met method requirements for all compounds except Endosulfan I. The MS and MSD were biased high. Since no Endosulfan I was not detected in the samples, there was no effect on data.

2.7.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.7.6 Method Blank
All the blanks were below the reporting limit for water.

2.7.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.7.8 Surrogates
All surrogates met method limits.

2.7.9 Holding Time
There was no holding time issue with the sample.

2.7.10 Endrin and 4,4'-DDT Breakdown
All breakdown analysis passed method requirements.

2.7.11 Retention Times
All retention times and retention time windows met method requirements.

2.7.12 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.8 Method 8082 Polychlorinated Biphenyl (PCBs) (Water)
The validation reviewed only those compounds of concern.

2.8.1 Initial Calibration
All method requirements were met for all data generated.

2.8.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits and all Relative Percent Differences passed.

2.8.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.8.3 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
There was not sufficient sample provided to perform a MS/MSD.

2.8.4 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.8.5 Method Blank
All the blanks were below the reporting limit for water.

2.8.6 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.8.7 Surrogates
All surrogates met recovery limits.

2.8.8 Holding Time
There was no holding time issue with the sample.

2.8.9 Retention Times
All retention times and retention time windows met method requirements.

2.8.10 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.9 Method 8082 Polychlorinated Biphenyl (PCBs) (Soil)
The validation reviewed only those compounds of concern.

2.9.1 Initial Calibration

All method requirements were met for all data generated.

2.9.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits and all Relative Percent Differences passed.

2.9.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.9.4 Matrix Spike and Matrix Spike Duplicate Analysis
All method requirements were met. All Matrix Spike compounds recovered with in the method limits. The Matrix Spike Duplicate was also within method limits and all Relative Percent Differences passed.

2.9.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.9.6 Method Blank
All the blanks were below the reporting limit for water.

2.9.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.9.8 Surrogates
All surrogates met method requirements except in the method blank. The recovery was biased positively and did not affect any sample data.

2.9.9 Manual Integration
The laboratory followed all proper protocols for manual integration.

2.9.10 Holding Time
There was no holding time issue with the sample.

2.9.11 Retention Times
All retention times and retention time windows met method requirements.

2.9.12 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.10 Method 8330 Explosives and Nitroglycerine (Water)
The validation reviewed only those compounds of concern.

2.10.1 Initial Calibration
All method requirements were met for all data generated.

2.10.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits and all Relative Percent Differences passed.

2.10.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.10.4 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
Not enough sample was provided for MS/MSD analysis.

2.10.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.10.5 Method Blank
All the blanks were below the reporting limit for water.

2.10.6 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.10.7 Surrogates
All surrogates met method limits.

2.10.8 Holding Time
There was no holding time issue with the sample.

2.10.9 Retention Times
All retention times and retention time windows met method requirements.

2.10.10 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.11 Method 8330 Explosives (Includes Nitroglycerine)(Soil)
The validation reviewed only those compounds of concern.

2.11.1 Initial Calibration

All method requirements were met for all data generated.

2.11.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. All LCS compounds recovered with in the method limits. The LCS Dup was also within method limits and all Relative Percent Differences passed.

2.11.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.11.4 Matrix Spike and Matrix Spike Duplicate Analysis
All method requirements were met. All Matrix Spike compounds recovered with in the method limits. The Matrix Spike Duplicate was also within method limits and all Relative Percent Differences passed.

2.11.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.11.6 Method Blank
All the blanks were below the reporting limit for water.

2.11.7 Field Duplicate (Sample Duplicate) Analysis
The field duplicate was non-detect as well as the original sample. No percent difference can be calculated. (Nitroglycerine only).

2.11.8 Surrogates
All surrogates met method limits.

2.11.9 Manual Integration
Manual integration was performed and followed method guidelines.

2.11.10 Holding Time
There was no holding time issue with the sample.

2.11.11 Retention Times
All retention times and retention time windows met method requirements.

2.11.12 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.12 Method 8330 Modified Nitroguanidine (Water)

The validation reviewed only the compound of concern.

2.12.1 Initial Calibration
All method requirements were met for all data generated.

2.12.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. The LCS ands LCS Dup compound recovered with in the method limits and the Relative Percent Difference passed.

2.12.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. The CCCs recovered within the method limits.

2.12.4 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
Not enough sample was provided for MS/MSD analysis.

2.12.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.12.6 Method Blank
All the blanks were below the reporting limit for water.

2.12.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.12.8 Surrogates
No surrogate is used in this method.

2.12.9 Holding Time
There was no holding time issue with the sample.

2.12.10 Retention Times
All retention times and retention time windows met method requirements.

2.12.11 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.13 Method 8330 Modified Nitroguanidine (Soil)
The validation reviewed only the compound of concern.

2.13.1 Initial Calibration
All method requirements were met for all data generated.

2.13.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. The LCS and LCS Dup compound recovered within the method limits and the Relative Percent Difference passed.

2.13.3 Continuing Calibration Checks. (CCCs)
All method requirements were met. All CCCs recovered within the method limits.

2.13.4 Matrix Spike and Matrix Spike Duplicate Analysis
All method requirements were met. The Matrix Spike and Matrix Spike Duplicate compound recovered within the method limits and the Relative Percent Difference passed.

2.13.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.13.6 Method Blank
All the blanks were below the reporting limit for water.

2.13.7 Field Duplicate (Sample Duplicate) Analysis
The field duplicate was non-detect as well as the original sample. No percent difference can be calculated.

2.13.8 Surrogates
No surrogate is used in this method.

2.13.9 Holding Time
There was no holding time issue with the sample.

2.13.10 Retention Times
All retention times and retention time windows met method requirements.

2.13.11 Second Column Confirmation
Second column confirmation was not required as no compounds were detected.

2.14 Method 6850 Perchlorate (Water)

2.14.1 Tune
Tune met method criteria.

2.14.2 Initial Calibration
All method requirements were met.

2.14.3 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. The LCS ands LCS Dup compound recovered with in the method limits and the Relative Percent Difference passed.

2.14.4 LC Interference Check Standard
The LC Interference Check Standard recovered within the method limits.

2.14.5 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
Prep Batch reports that an MS/MSD was extracted but on data is provided in the report.

2.14.6 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.14.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.14.8 Holding Time
There was no holding time issue with the sample.

2.14.9 Retention Times
All retention times and retention time windows met method requirements.

2.14.10 Method Blank, Initial Calibration Blank
All the blanks were below the reporting limit for water

2.15 Method 6850 Perchlorate by ICMS (Soil)
The validation reviewed only the compound of concern.

2.15.1 Tune
Tune met method criteria.

2.15.2 Initial Calibration
All method requirements were met for all data generated.

2.15.3 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met. The LCS and LCS Dup compound recovered within the method limits and the Relative Percent Difference passed.

2.15.4 LC Interference Check Standard
The LC Interference Check Standard recovered within the method limits

2.15.5 Matrix Spike and Matrix Spike Duplicate Analysis
The Matrix Spike and Matrix Spike Duplicate met method requirements.

2.15.6 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.15.7 Method Blank
All the blanks were below the reporting limit for water.

2.15.8 Field Duplicate (Sample Duplicate) Analysis
The field duplicate was non-detect as well as the original sample. No percent difference can be calculated.

2.15.9 Holding Time
There was no holding time issue with the sample.

2.15.10 Retention Times, Relative Retention Time
All retention times and retention time windows met method requirements.

2.16 Method 353.2 Nitrocellulose General Chemistry (Water)
The validation reviewed only the compound of concern.

2.16.1 Initial Calibration
All method requirements were met.

2.16.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met.

2.16.3 Continuing Calibration Verification
All Continuing Calibration Verifications passed method requirements.

2.16.4 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
The MS/MSD met method requirements.

2.16.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.16.6 Method Blank, Initial Calibration Blank, Continuing Calibration Blank
All the blanks were below the reporting limit for water.

2.16.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.16.8 Holding Time
There was no holding time issue with the sample.

2.17 Method 353.2 Nitrocellulose General Chemistry (Soil)
The validation reviewed only the compound of concern.

2.17.1 Initial Calibration
All method requirements were met.

2.17.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met.

2.17.3 Continuing Calibration Verification
All Continuing Calibration Verifications passed method requirements.

2.17.4 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
The Matrix Spike and Matrix Spike Duplicate passed as well as the RPD.

2.17.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.17.6 Method Blank, Initial Calibration Blank, Continuing Calibration Blank
All the blanks were below the reporting limit for water.

2.17.7 Field Duplicate (Sample Duplicate) Analysis
The field duplicate was non-detect as well as the original sample. No percent difference can be calculated.

2.17.8 Holding Time
There was no holding time issue with the samples.

2.18 Method 7470A Mercury (Water)

2.18.1 Initial Calibration
All method requirements were met.

2.18.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met.

2.18.3 Continuing Calibration Verification
All Continuing Calibration Verifications passed method requirements.

2.18.4 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
The Matrix Spike and the Matrix Spike Duplicate passed and the RPD was within method limits.

2.18.4 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.18.5 Method Blank, Initial Calibration Blank, Continuing Calibration Blank
All the blanks were below the reporting limit for water.

2.18.6 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was available.

2.18.7 Holding Time
There was no holding time issue with the sample.

2.19 Method 7471A Mercury (Soil)
Two packages were reviewed.

2.19.1 Initial Calibration
All method requirements were met.

2.19.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met.

2.19.3 Continuing Calibration Verification
All Continuing Calibration Verifications passed method requirements.

2.19.4 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
The Matrix Spike and Matrix Spike Duplicate passed as well as the RPD.

2.19.5 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.19.6 Method Blank, Initial Calibration Blank, Continuing Calibration Blank
All the blanks were below the reporting limit.

2.19.7 Field Duplicate (Sample Duplicate) Analysis
No field duplicate was provided.

2.19.8 Holding Time
There was no holding time issue with sample PCTss-006M-0001-so in Project # 320-18324-1. The soil samples PCTsb-001M-0001-SO, PCTsb-002M-0001-SO, PCTsb-003M-0001-SO, PCTss-004M-0001-SO, PCTss-005M-0001-SO, PCTss-005M-0001-DS, PCTss-007M-0001-SO, PCTss-008M-0001-SO were all analyzed outside of the holding time for soil. All detected concentrations were qualified as estimated, biased low (J-).

2.20 Method 6010B and 6010B trace Metals (Water)
The validation reviewed only the elements of concern.

2.20.1 Initial Calibration
All method requirements were met.

2.20.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met.

2.20.3 Continuing Calibration Verification
All Continuing Calibration Verifications passed method requirements.

2.20.4 Method Blank, Preparation Blank, Initial Calibration Blank (ICB), and the Continuing Calibration Blank (CCB) Analysis
All the blanks were below the reporting limit.

2.20.5 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
The Matrix Spike and Matrix Spike Duplicate passed as well as the RPD.

2.20.6 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.20.7 The Inter-element Correction Standard A & B (ICSAB)
The ICSAB recoveries all were within the 80-120% recovery range required by the method for all project numbers.

2.20.8 ICP Serial Dilution

No serial dilution as no elements were detected 4 time higher than the reporting limit.

2.20.9 Field Duplicate (Sample Duplicate) Analysis
No field duplicate provided.

2.21 Method 6010B and 6010B trace Metals (Soil)
The validation reviewed only the elements of concern.

2.21.1 Initial Calibration
All method requirements were met.

2.21.2 Laboratory Control Sample (LCS) (Second Source Compounds)
All method requirements were met.

2.21.3 Continuing Calibration Verification
All Continuing Calibration Verifications passed method requirements.

2.21.4 Method Blank, Preparation Blank, Initial Calibration Blank (ICB), and the Continuing Calibration Blank (CCB) Analysis
All the blanks were below the reporting limit.

2.21.5 Matrix Spike and Matrix Spike Duplicate Analysis (MS/MSD)
The Matrix Spike and Matrix Spike Duplicate passed as well as the RPD for many elements. The elements that had concentration that were more than 4 times greater than the spike concentration are not valid and do not have any affect on data

The MS/MSD results for antimony in soil were less than the evaluation criteria and the percent recovery for both the spike and duplicate were less than 35%. Therefore, the result for antimony in sample PCTsb-003M-0001-SO, associated with the low MS/MSD recovery, was rejected. However, since matrix homogeneity could not be established, antimony was not qualified in the associated batch samples.

2.21.6 Contract Required Detection Limit Standard and Reporting Limit Standard Analysis
All method requirements were met.

2.21.7 The Inter-element Correction Standard A & B (ICSAB)
The ICSAB recoveries all were within the 80-120% recovery range required by the method for all project numbers.

2.21.8 ICP Serial Dilution

The serial dilution passed for all elements that qualified. Elements that were not at least 10 time the reporting limit would not qualify.

2.21.9 Field Duplicate (Sample Duplicate) Analysis
No field duplicate provided.

3.0 QC Summary

3.1 Executive Summary

3.3.1 All Methods
All the system quality assurance and controls were met. There is no indication that any instrument quality system did not meet method criteria. The Benzoic Acid in both water and soil failed due to the LCS and LCS Dup which is not an instrument issue. The flag for the Benzoic Acid is justified. The results for mercury in the seven samples that exceeded the holding time qualified as estimated, biased low (J-). The result for antimony in sample PCTsb-003M-0001-SO, associated with the low MS/MSD recovery, was rejected.

3.3.2 Data Validator Narrative
For each issue the data validator provided an explanation for each issue that would have affected data. There were no issues in any sample or method that would have adversely affected any data. All data is valid and useful.

3.3.3 Holding Times
The issue regarding the holding time for Mercury in soils in report 320-18324-2: It is the professional judgment of the data validator that the results are usable (J-).

3.4 Usability and Comparability

Usability of data was evaluated by assuring that all the analytical requests were met, samples that were received in the proper condition, and all analysis were performed within the appropriate holding times. Additionally, all quality control and quality assurance measures were taken to assure accurate and useable data. Most sample results that are estimated were flagged because the reported value is below the Reporting Limit. Eight results were estimated because of holding time exceedances and eight results were estimated because of matrix spike criteria exceedances. **Except for one antimony result, all sample data above the Report Limit is valid and usable.**

An overview of the validation findings is presented in tabular form in Appendix A. The check sheets and any additional comments are found in those sheets. The suggested data validation flags are listed below and are defined as follows:

R Quality Control (QC) indicated the data is not usable.

J Indicates an estimated value.

UJ Indicates that the compound is detected above the MDL (Method Detection Limit) but below the RL (Reporting Limit).

U Indicates the compound or analyte was analyzed for, but not detected at or above the stated limit.

The above flags are incorporated in the data table where they apply based upon the RVAAP QAAP. Any flags generated by the laboratory utilizing the laboratory's internal QC program are not presented in the data tables.

All sample data described in this report are usable and valid except for one antimony result.

4.0 References

RVAAP QAAP
The DOD QSM
National Functional Guidelines for Data Validation
USEPA Test Methods for evaluating Solid Waste SW-846

Glossary of Terms

°C	degrees Celsius
CCB	Continuing Calibration Blank (used in Metals analysis)
CCV	Continuing Calibration Verification (used in all methods to verify system calibration)
CLP	Contract Laboratory Program (used in Superfund program)
COC	Chain of Custody
%D	Percent Difference
DQO	Data Quality Objectives
DS	Down Stream
FB	Field Blank
FD	Field Duplicate
ICB	Initial Calibration Blank (used primarily in metals analysis)
ICP	Inductively Coupled Plasma
ICPMS	Inductively Coupled Plasma Mass Spectrometer
ICV	Initial Calibration Verification (second source standard used to initially verify the calibration curve.
ICS	Interference Check Solution (used in ICP and ICPMS only)
ICSA	Interference Check Solution A
ICSAB	Interference Check Solution A&B combined
IS	Internal Standard
LCG	Louisville Chemistry Guideline Version 5
LCS	Laboratory Control Sample
MRL	Method Reporting Limit (MRL)
MDL	Method Detection Limit (MDL)
MD	Matrix Duplicate (often referred to as the sample duplicate)
MSA	Method of Standard Additions
MS/MSD	Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
PARCC	Precision, Accuracy, Representativeness, Completeness, Comparability
PD	Post Digested Spike (also PDS)
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SAP	Sampling and Analysis Plan
SD	Standard Deviation
SDG	Sample Delivery Group
SOP	Standard Operating Procedure (SOPs is plural)
TB	Trip Blank
TCLP	Toxic Compound Leaching Procedure
TERC	Total Environmental Restoration Contract
USACE or ACE	United States Army Corps of Engineers Army Corps of Engineers
USEPA	United States Environmental Protection Agency
%R	Percent Recovery

Appendix A

Tables

Flag Change Table

Analyte	Lab	ADR	QAAP	Validator	Samples Affected	Reason For Change
	Flag	Flag	Flag	Flag		
Aluminum	JD	J	none	none	PCTsb-003M-0001-SO	The spike concentrations were less than 4 time the analyte concentration in the sample (<1/4). Therefore, no qualification is required.
Iron	JD	J	none	none	PCTsb-003M-0001-SO	
Manganese	JD	J	none	none	PCTsb-003M-0001-SO	
Mercury	JH	J	R	J-	PCTsb-001M-0001-SO	The holding time for mercury was exceeded. The results are qualified as estimated, biased low.
	JH	J	R	J-	PCTsb-002M-0001-SO	
	JH	J	R	J-	PCTsb-003M-0001-SO	
	JH	J	R	J-	PCTss-004M-0001-SO	
	JH	J	R	J-	PCTss-005M-0001-SO	
	JH	J	R	J-	PCTss-005M-0001-DS	
	JH	J	R	J-	PCTss-007M-0001-SO	
	JH	J	R	J-	PCTss-008M-0001-SO	
Antimony	UJ	R	U	U	PCTsb-001M-0001-SO	The MS/MSD results for antimony in soil were less than the evaluation criteria and the percent recovery for both the spike and duplicate were less than 35%. Therefore, antimony in sample PCTsb-003M-0001-SO, associated with the low MS/MSD recovery, was rejected. However, since matrix homogeneity could not be established, antimony was not qualified in the associated batch samples.
	UJ	R	U	U	PCTsb-002M-0001-SO	
	UJ	R	R	R	PCTsb-003M-0001-SO	
	UJ	R	U	U	PCTss-004M-0001-SO	
	UJ	R	U	U	PCTss-005M-0001-SO	
	UJ	R	U	U	PCTss-005M-0001-DS	
	UJ	R	U	U	PCTss-007M-0001-SO	
	UJ	R	U	U	PCTss-008M-0001-SO	
Nitrocellulose	U	R	U	U	PCTsb-001M-0001-SO	Samples were extracted and analyzed within the QAPP required holding time for preserved samples. No qualification was warranted.
	U	R	U	U	PCTsb-002M-0001-SO	
	U	R	U	U	PCTsb-003M-0001-SO	
	U	R	U	U	PCTss-004M-0001-SO	
	U	R	U	U	PCTss-005M-0001-SO	
	U	R	U	U	PCTss-005M-0001-DS	
	U	R	U	U	PCTss-007M-0001-SO	
	U	R	U	U	PCTss-008M-0001-SO	

Appendix B

All Check Lists

Purves Environmental

Semi-Volatile Organic Analysis Checklist Method 8270C

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Tune	Was DFTPP tune performed at the beginning of each 12-hour period during which samples were analyzed?	Yes	
	Was mass assignment based on m/z 198?	Yes	

Indicate if DFTPP ion abundance relative to m/z 198 base peak met the ion abundance criteria.

m/z	Acceptance Criteria		
51	30-60%	Yes	
68	< 2% mass 69	Yes	
70	< 2% mass 69	Yes	
127	40-60%	Yes	
197	<1%	Yes	
198	100% Base Peak	Yes	
199	5-9%	Yes	
275	10-30%	Yes	
365	>1%	Yes	
441	present but < mass 443	Yes	
442	>40%	Yes	
443	17-23% of mass 442	Yes	

Initial Calibration	Five calibration standard minimum	Yes	
	Was the linear model applied?	Yes	
	Was the quadratic model applied as needed?	Yes	

System Performance Check Compounds (SPCC)

Did they meet the minimum mean responsfactor?

N-nitroso-di-n-propylamine	Yes	
Hexachlorocyclopentadiene	Yes	
2,4-dinitrophenol	Yes	
4-nitrophenol	Yes	

Calibration Check Compounds (CCC)

Did the RSD meet the criteria of < 30% for each compound?

Base/Neutral Fraction:

Acenaphthene	Yes	
1,4-Dichlorobenzene	Yes	
Hexachlorobutadiene	Yes	
Diphenylamine	Yes	
Di-n-octylphthalate	Yes	
Fluoranthene	Yes	
Benzo(a)pyrene	Yes	

Acid Fraction

4-Chloro-3-3methylphenol	Yes	
2,4-Dichlorophenol	Yes	
2-Nitrophenol	Yes	
Phenol	Yes	
Pentachlorophenol	Yes	
2,4,6-Trchlorophenol	Yes	

Semi-Volatile Organic Analysis Checklist Method 8270C (Cont pg 2)

Remaining Target Analytes

Are the RSDs <15% for the remaining target analytes	Yes	

If No are the mean RSDs < 15%
or r >0.99 with a mean RSD < 15% with a maximum RSD< 30%?

Manual Integration

Was manual integration "M" performed?	Yes	

Manual intrgration was performed within the method guidelines and was required under the operating conditions.

QCMDL

Was MDL check performed?	Yes	

QCMRL

Was QCMRL run at thebeginning and end of every daily sequence or every 12 hours?	Yes	
Was QCMRL between 70-130% recovery	Yes	
For the non-contaminants of concern, was the QCMRL between 50-150%	Yes	

Intital Calibration Verification (ICV)

Is the mid level (2nd source) recovery within 70-130% for contaminants of concern?	Yes	
Is the mid level (2nd source) recovery within 50-150% for non-contaminants of concern?	Yes	

Continuing Calibration Verification (CCV)

Was CCV run every 12 hours?	Yes	

Did SPCC meet the minimum mean response factor?

N-nitroso-di-n-propylamine	Yes	
Hexachlorocyclopentadiene	Yes	
2,4-dinitrophenol	Yes	
4-nitrophenol	Yes	

Did the CCC meet the minimum requirements (D< 20%)

Base/Neutral Fraction:

Acenaphthene	Yes	
1,4-Dichlorobenzene	Yes	
Hexachlorobutadiene	Yes	
Diphenylamine	Yes	
Di-n-octylphthalate	Yes	
Fluoranthene	Yes	
Benzo(a)pyrene	Yes	

Acid Fraction

4-Chloro-3-3methylphenol	Yes	
2,4-Dichlorophenol	Yes	
2-Nitrophenol	Yes	
Phenol	Yes	
Pentachlorophenol	Yes	
2,4,6-Trchlorophenol	Yes	

Primary Evaluation: Was the mean drift < 20% from the initial Calibration?	Yes	

Semi-Volatile Organic Analysis Checklist Method 8270C (Cont pg 3)

	Maximum allowable drift for each target analyte s <30% when D < 20%?	Yes	

Sample Analysis

	Was the RRT of an identified componet within +/- 0.06 RRT units of the RRT f the standard componet.	Yes	
	Did the abundanceof ions I the sample spectra agree within 30% of the major ions (> 10% of the base peak) in the standard spectra	Yes	
	Were internal standards within the QC limits of -50% to +200%	Yes	

Sample Quality Control

Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	N/A	
	Were RPD within control limits?	N/A	
Surrogates			
	Are surrogate recoveries within QC limits	Yes	

Comments Some surrogates were diluted out. All other surrogates met method requirements

Signed:_____

William W. Purves

Purves Environmental

Method 8330 Nitroaromatic, Nitramine and Nitroglycerine Data Analysis (Explosive Residues) Checklist

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Initial Calibration	Five calibration standard minimum	Yes	
Manual Integration			
	Was manual integration "M" performed?	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL			
	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the % "D" <30%	Yes	
Intital Calibration Verification (ICV)			
	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)			
	Was CCV run at the beginning of the day or run every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted every ten samples or every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements (D<15% with a maximum D < 20% for a specific compound.	Yes	
Sample Analysis			
	Was the RRT of an identified componet within the required retention time window.	Yes	
	Were all identified hits, above the initial calibration curve diluted and reanalyzed	Yes	
	Were all identified compounds confirmed on a second column	Yes	
	Was all RPD of target analyte confirmation <40%	Yes	
	Was there a shoulder on the 2,4,6-TNT peak?		No
Sample Quality Control			
Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	

Purves Environmental

Method 8330 Nitroaromatic, Nitramine and Nitroglycerine Data Analysis (Explosive Residues) Checklist

MS/MSD	Were percent recovries within control limits?	Yes: Soils only run	
	Were RPD within control limits?	Yes	
Surrogates			
	Are surrogate recoveries within QC limits	Yes	
Second Column Confirmation			
	Was Second column confirmation performed?	Yes	

Comments

Signed:_____ 

William W. Purves

Purves Environmental

Volatile Organic Analysis Checklist Method 8260B

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Tune	Was BFB tune performed at the beginning of each 12-hour period during which samples were analyzed?	Yes	
	Was mass assignment based on m/z 95, 174, 176	Yes	

m/e	Acceptance Criteria		
50	15.0-40.0% of mass 95	Yes	
75	30.0-60.0% of mass 95	Yes	
95	Base Peak 100%	Yes	
96	5.0-9.0% of mass 95	Yes	
173	Less than 2% of mass 174	Yes	
174	50.0-120.0 of mass 95	Yes	
175	5.0-9.0% of mass 174	Yes	
176	95.0-101.0% of mass 174	Yes	
177	5.0-9.0% of mass 176	Yes	

Initial Calibration	Five calibration standard minimum	Yes	
	Was the linear model applied?	Yes	
	Was the quadratic model applied as needed?	Yes	

System Performance Check Compounds (SPCC)

	Did the SPCC meet the minimum mean response factor?	Yes	

Calibration Check Compounds (CCC)

	Did the RSD meet the criteria of < 30% for each compound?	Yes	

Remaining Target Analytes

	Are the RSDs <15% for the remaining target analytes	Yes	

If No are the mean RSDs < 15%

or r >0.99 with a mean RSD < 15% with a maximum RSD< 30%?

Manual Integration

	Was manual integration "M" performed?	Yes	

Manual intrgration was performed within the method guidelines and was required under the operating conditions.

QCMDL	Was MDL check performed?	Yes	

Purves Environmental

Volatile Organic Analysis Checklist Method 8260B (Cont)

QCMRL	Was QCMRL run at thebeginning and end of every daily sequence or every 12 hours?	Yes	
	Was QCMRL between 70-130% recovery	Yes	
	For the non-contaminants of concern, was the QCMRL between 50-150%	Yes	
Intital Calibration Verification (ICV)			
	Is the mid level (2nd source) recovery within 70-130% for contaminants of concern?	Yes	
	Is the mid level (2nd source) recovery within 50-150% for non-contaminants of concern?	Yes	
Continuing Calibration Verification (CCV)			
	Was CCV run every 12 hours?	Yes	
Drift			
	Maximum allowable drift for each target analyte s <30% when D < 20%?	Yes	
Sample Analysis			
	Was the RRT of an identified componet within +/- 0.06 RRT units of the RRT f the standard componet.	Yes	
	Did the abundanceof ions I the sample spectra agree within 30% of the major ions (> 10% of the base peak) in the standard spectra	Yes	
	Were internal standards within the QC limits of -50% to +200%	Yes	
Sample Quality Control			
Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes: Soil Only Run	
	Were RPD within control limits?	Yes: Soil Only Run	
Surrogates			
	Are surrogate recoveries within QC limits	Yes	

Comments

Signed:_____

William W. Purves

Purves Environmental

Method 8081A Pesticides

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Initial Calibration	Five calibration standard minimum	Yes	
Manual Integration	Was manual integration "M" performed?	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the % "D" <30%	Yes	
Intital Calibration Verification (ICV)	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)	Was CCV run at the beginning of the day or run every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted every ten samples or every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements (D<15% with a maximum D < 20% for a specific compound.	Yes	
Sample Analysis	Was the RRT of an identified componet within the required retention time window.	Yes	
	Were all identified hits, above the initial calibration curve diluted and reanalyzed	Yes	
	Were all identified compounds confirmed on a second column	Yes	
	Was all RPD of target analyte confirmation <40%	Yes	
	Was there Endrin or 4,4-DDT peak breakdown?		No

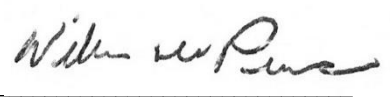
Purves Environmental

Method 8081A Pesticides (Cont)

Sample Quality Control

Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes: Soils only run	
	Were RPD within control limits?	Yes	
Surrogates			
	Are surrogate recoveries within QC limits	Yes	

Comments

Signed: 

William W. Purves

Purves Environmental

Method 8082 PCB (Arochlors)

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Initial Calibration	Five calibration standard minimum	Yes	
Manual Integration	Was manual integration "M" performed?	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the % "D" <30%	Yes	
Intital Calibration Verification (ICV)	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)	Was CCV run at the beginning of the day or run every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted every ten samples or every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements (D<15% with a maximum D < 20% for a specific compound.	Yes	
Sample Analysis	Was the RRT of an identified componet within the required retention time window.	Yes	
	Were all identified hits, above the initial calibration curve diluted and reanalyzed	Yes	
	Were all identified compounds confirmed on a second column	Yes	
	Was all RPD of target analyte confirmation <40%	Yes	
	Was there Endrin or 4,4-DDT peak breakdown?		No

Purves Environmental

Method 8082 PCBs (Arochlors) (Cont)

Sample Quality Control

Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes: Soils only run	
	Were RPD within control limits?	Yes	
Surrogates	Are surrogate recoveries within QC limits	Yes	
Second Column Confirmation	Was Second column confirmation performed?	Yes	

Comments:

Signed:_____

William W. Purves

Purves Environmental

Method 8330 Modified Nitroguanidine Check List

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Initial Calibration	Five calibration standard minimum	Yes	
Manual Integration	Was manual integration "M" performed?		No
QCMDL	Was MDL check performed?	Yes	
QCMRL	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the % "D" <30%	Yes	
Intital Calibration Verification (ICV)	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)	Was CCV run at the beginning of the day or run every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted every ten samples or every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements (D<15% with a maximum D < 20% for a specific compound.	Yes	
Sample Analysis	Was the RT of an identified componet within the required retention time window.	Yes	
	Were all identified hits, above the initial calibration curve diluted and reanalyzed	Yes	
	Were all identified compounds confirmed on a second column	Yes	
	Was all RPD of target analyte confirmation <40%	Yes	

Purves Environmental

Method 8330 Modified Nitroguanidine Check List (Cont)

Sample Quality Control

Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes: Soils only run	
	Were RPD within control limits?	Yes	

Second Column Confirmation

	Was Second column confirmation performed?	Yes	

Comments

Signed:_____

William W. Purves

Purves Environmental

Method 6850 Perchlorate LCMS Check List

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

		Yes	No
MS Tune	Did the system Tune Pass?	Yes	
Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Initial Calibration	Five calibration standard minimum	Yes	
Manual Integration	Was manual integration "M" performed?		No
QCMDL	Was MDL check performed?	Yes	
QCMRL	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the % "D" <30%	Yes	
Internal Standard	Did the internal Standard Meet Method Criteria?	Yes	
Intital Calibration Verification (ICV)	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)	Was CCV run at the beginning of the day or run every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted every ten samples or every 12 hours?	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements (D<15% with a maximum D < 20% for a specific compound.	Yes	
Sample Analysis	Was the RRT of an identified componet within the required retention time window.	Yes	
	Were all identified hits, above the initial calibration curve diluted and reanalyzed	Yes	

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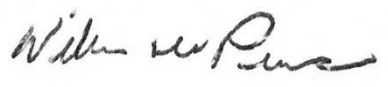
Method 6850 Perchlorate LCMS Check List (Cont)

Sample Quality Control

Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes: Soils only run	
	Were RPD within control limits?	Yes	

Comments

Signed:_____ 

William W. Purves

Purves Environmental

Method 6010B ICP Metals (Water and Soil)

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1 and 320-18324-2

Holding Time:	Were Samples extracted within holding times?	Yes	
	Were Samples analyzed within holding times?	Yes	
Initial Calibration	Three calibration standard minimum	Yes	
ICV	Did the ICV Pass?	Yes	
ICS A&B			
	Did the ICS A & B Pass?	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL			
	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the recovery 75-125%	Yes	
Intital Calibration Verification (ICV)			
	Is the mid level (2nd source) recovery within 90-110%	Yes	
Continuing Calibration Verification (CCV)			
	Was the midpoint sample (CCV) conducted every ten samples	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements	Yes	
Sample Analysis	Was all data within the calibration range or diluted within the range?	Yes	
Sample Quality Control			
Method Blank	Were Target analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes	
	Were RPD within control limits?	Yes	
Serial Dilution	Was the serial Dilution within control limits?	Yes	

Method 6010B ICP Metals (Water and Soil) (Cont)

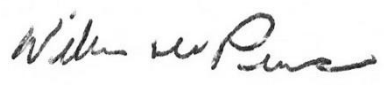
Comments:

TestAmerica Job ID: 320-18324-1 and 320-18324-2

The water for Job # 320-18324-1 was analyzed within holding requirements.

The Soil for Job # 320-18324-1 was analyzed at the same time as the water

The Soils for Job # 320-18324-2 were analyzed within the holding time eventhough Soils have no specified holding time in 40CFR136

Signed: 

William W. Purves

Purves Environmental

Method 7141A Mercury (Soil)

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-2

Holding Time:	Were Samples extracted within holding times? 320-18324-2		No*
Initial Calibration	Five calibration standard minimum	Yes	
ICV	Did the ICV Pass	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the recovery 75-125%	Yes	
Intital Calibration Verification (ICV)			
	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)			
	Was the midpoint sample (CCV) conducted every ten samples	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements	Yes	
Sample Analysis	Was all data within the calibration range or diluted within the range?	Yes	
Sample Quality Control			
Method Blank	Was mercury results analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes	
	Were RPD within control limits?	Yes	

Comments:

*** Soils have no established hold time in 40CFR136, all of the soil data for mercury is valid H flags should be removed.**

Signed:_____

William W. Purves

Purves Environmental

Method 7140A/7141A Mercury (Water and Soil)

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

Holding Time:	Were Samples extracted within holding times? 320-18324-1	Yes	
Initial Calibration	Five calibration standard minimum	Yes	
ICV	Did the ICV Pass	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL			
	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the recovery 75-125%	Yes	
Intital Calibration Verification (ICV)			
	Is the mid level (2nd source) recovery within 85-115%	Yes	
Continuing Calibration Verification (CCV)			
	Was the midpoint sample (CCV) conducted every ten samples	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements	Yes	
Sample Analysis	Was all data within the calibration range or diluted within the range?	Yes	
Sample Quality Control			
Method Blank	Was mercury results analytes < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes	
	Were RPD within control limits?	Yes	

Comments:

Signed: William W. Purves

William W. Purves

Purves Environmental

Method Nitrocellulose Method 353.2 (Water and Soil)

Project Name: Ravenna PO# 1208157-009

Laboratory: TestAmerica (Various)

TestAmerica Job ID: 320-18324-1

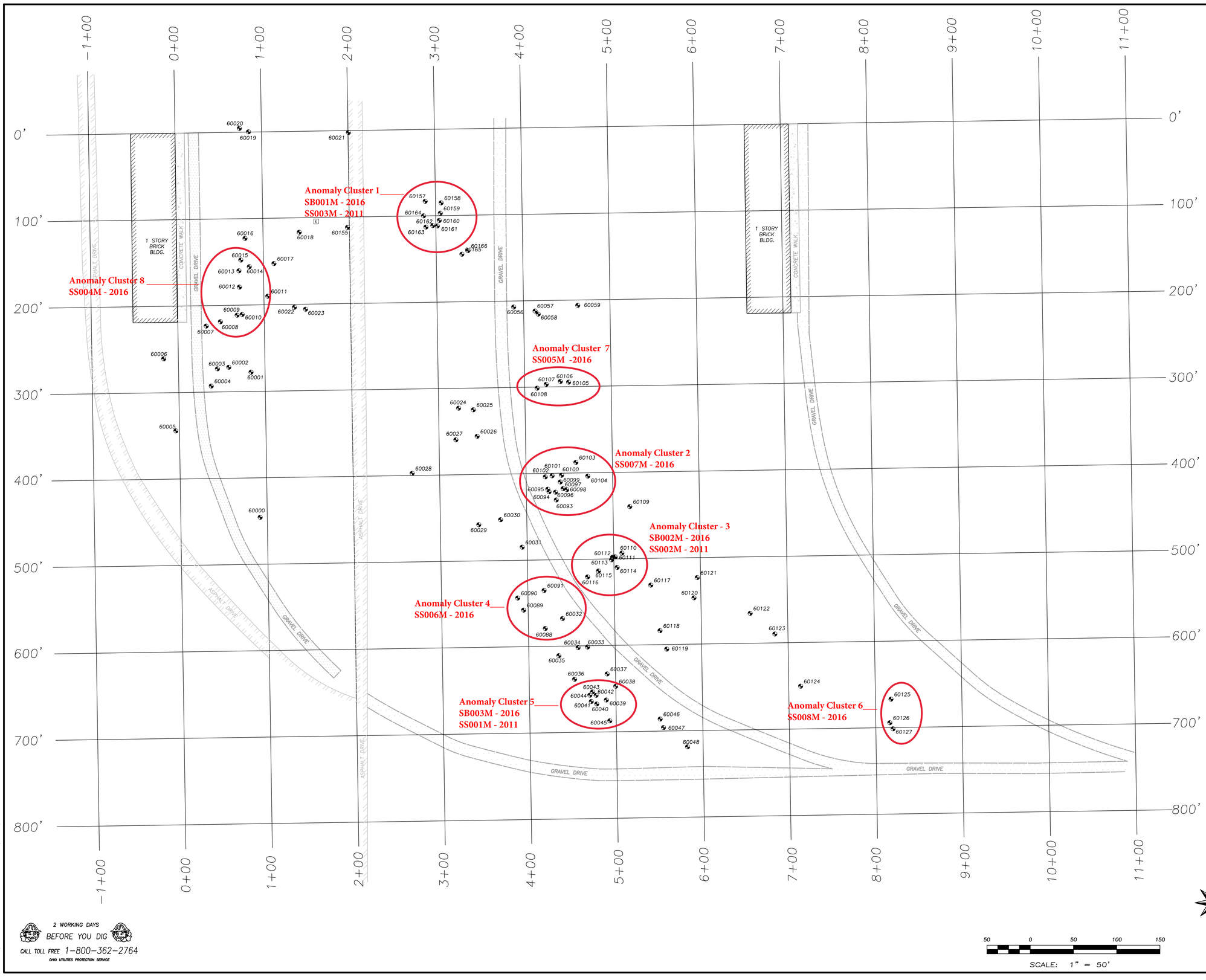
Holding Time:	Were Samples extracted within holding times?	Yes	
Initial Calibration	Was the number of calibration standards required met?	Yes	
ICV	Did the ICV Pass	Yes	
QCMDL	Was MDL check performed?	Yes	
QCMRL	Was QCMRL run at the beginning and end of every daily sequence or every 12 hours?	Yes	
	Was the recovery requirements met?	Yes	
Intital Calibration Verification (ICV)			
	Did the ICV met requirements?	Yes	
Continuing Calibration Verification (CCV)			
	Was the midpoint sample (CCV) conducted every ten samples	Yes	
	Was the midpoint sample (CCV) conducted at the end of the day/run.	Yes	
	Did the CCV meet the minimum requirements	Yes	
Sample Analysis	Was all data within the calibration range or diluted within the range?	Yes	
Sample Quality Control			
Method Blank	Was the blank results < 1/2 the MRL for the Method Blank	Yes	
LCS	Were the % recoveries for the LCS within the limits?	Yes	
MS/MSD	Were percent recovries within control limits?	Yes	
	Were RPD within control limits?	Yes	

Comments:

Signed: 

William W. Purves

APPENDIX D: SURVEY DATA AND INFORMATION



Flag	Northing	Easting	Station	Offset
60005	566362.4	2367508.6	-0+4.2	344.3
60006	566445.7	2367494.6	-0+17.0	260.8
60007	566483.7	2367543.7	0+32.7	223.6
60004	566414.2	2367549.5	0+37.5	293.1
60003	566434.2	2367556.7	0+44.9	273.2
60008	566488.6	2367560.1	0+49.2	218.9
60002	566436.0	2367569.8	0+58.1	271.7
60009	566496.2	2367579.5	0+68.7	211.6
60013	566547.6	2367581.6	0+71.5	160.3
60012	566528.7	2367582.1	0+71.8	179.1
60015	566559.9	2367583.8	0+73.9	147.9
60010	566497.1	2367585.3	0+74.5	210.8
60020	566712.3	2367582.1	0+74.6	-4.44
60016	566585.1	2367588.6	0+79.1	122.9
60014	566552.3	2367593.6	0+83.6	155.7
60001	566430.3	2367595.6	0+83.7	277.7
60019	566708.3	2367592.6	0+85.0	-0.29
60000	566262.5	2367606.2	0+91.8	445.7
60011	566518.2	2367614.9	1+04.4	190.2
60017	566555.9	2367622.1	1+12.1	152.5
60022	566505.4	2367645.7	1+35.0	203.4
60018	566592.1	2367651.3	1+41.9	116.8
60023	566503.1	2367658.6	1+47.9	205.9
60155	566597.7	2367707.1	1+97.8	112.0
60021	566707.4	2367708.1	2+00.5	2.4
60028	566313.3	2367781.9	2+68.2	397.5
60164	566611.1	2367795.1	2+86.0	100.0
60157	566628.0	2367797.0	2+88.1	83.2
60163	566598.1	2367797.8	2+88.5	113.0
60162	566599.9	2367805.8	2+96.5	111.4
60161	566599.4	2367811.0	3+01.8	111.9
60160	566605.8	2367813.2	3+04.0	105.5
60159	566614.2	2367814.5	3+05.4	97.2
60158	566626.1	2367815.4	3+06.5	85.3
60027	566352.0	2367832.5	3+19.4	359.6
60024	566388.6	2367835.6	3+23.1	323.1
60165	566566.7	2367839.4	3+29.6	145.1
60166	566570.8	2367846.3	3+36.5	141.1
60025	566386.8	2367852.7	3+40.1	325.1
60026	566356.1	2367857.1	3+44.1	355.9
60029	566253.8	2367859.0	3+44.4	458.2
60030	566259.6	2367884.2	3+69.7	452.8
60090	566169.1	2367904.0	3+88.1	543.6
60056	566505.7	2367899.4	3+88.6	207.0
60031	566227.9	2367909.1	3+94.2	484.9
60089	566155.1	2367910.8	3+94.7	557.7
60057	566501.1	2367924.0	4+13.2	212.0
60108	566411.8	2367926.4	4+14.3	301.3
60058	566497.5	2367927.8	4+16.9	215.6
60091	566177.8	2367934.5	4+18.7	535.4

Flag	Northing	Easting	Station	Offset
60088	566133.8	2367935.9	4+19.5	579.4
60102	566309.2	2367935.9	4+22.1	404.0
60095	566294.9	2367938.7	4+24.8	418.3
60107	566416.2	2367936.9	4+24.8	297.0
60094	566291.9	2367940.2	4+26.2	421.4
60101	566310.5	2367943.7	4+30.0	402.8
60096	566291.5	2367947.8	4+33.8	421.9
60093	566282.5	2367948.6	4+34.5	430.9
60035	566102.4	2367951.5	4+34.6	611.0
60099	566303.3	2367953.2	4+39.4	410.2
60032	566145.3	2367955.8	4+39.6	568.2
60100	566311.1	2367954.6	4+40.9	402.4
60106	566419.6	2367953.3	4+41.2	293.9
60097	566295.7	2367956.5	4+42.5	417.9
60098	566294.4	2367960.7	4+46.7	419.2
60105	566418.7	2367962.8	4+50.8	294.9
60036	566075.1	2367969.7	4+52.4	638.6
60034	566111.7	2367973.8	4+57.1	602.0
60103	566326.0	2367971.2	4+57.7	387.8
60059	566507.5	2367973.4	4+62.7	206.3
60033	566112.4	2367984.8	4+68.0	601.5
60116	566193.5	2367984.8	4+69.3	520.4
60044	566056.7	2367987.4	4+69.8	657.3
60104	566310.1	2367985.0	4+71.3	403.9
60041	566049.4	2367989.1	4+71.4	664.6
60043	566060.5	2367990.5	4+73.0	653.5
60042	566056.5	2367994.7	4+77.1	657.6
60040	566046.5	2367995.4	4+77.7	667.6
60115	566200.3	2367997.4	4+82.0	513.8
60039	566051.2	2368006.5	4+88.8	663.0
60037	566081.3	2368007.4	4+90.2	633.0
60045	566027.0	2368010.5	4+92.4	687.3
60113	566213.3	2368012.5	4+97.3	501.1
60112	566216.4	2368013.7	4+98.6	498.0
60038	566067.0	2368017.3	4+99.9	647.4
60111	566216.8	2368016.7	5+01.6	497.7
60114	566204.5	2368019.0	5+03.6	510.0
60110	566221.2	2368024.5	5+09.4	493.4
60109	566274.9	2368033.6	5+19.3	439.8
60117	566184.0	2368057.9	5+42.2	531.0
60046	566029.1	2368068.7	5+50.7	686.1
60118	566131.3	2368068.6	5+52.1	583.9
60047	566019.2	2368072.5	5+54.4	696.0
60119	566110.0	2368076.3	5+59.5	605.3
60048	565997.0	2368100.4	5+81.9	718.7
60120	566169.3	2368107.8	5+91.9	546.5
60121	566192.7	2368111.6	5+96.1	523.1
60122	566151.4	2368172.8	6+56.6	565.3
60123	566127.4	2368201.3	6+84.7	589.8
60124	566067.1	2368231.1	7+13.7	650.6
60126	566024.9	2368334.3	8+16.2	694.4
60125	566052.1	2368335.6	8+18.0	667.1
60127	566017.8	2368338.1	8+19.8	701.5

LEGEND

GEOSEARCHES FLAG

E ELECTRIC PEDESTAL

SS = Surficial Soil Sample
SB = Subsurface Soil Sample

Figure 5 - CC RVAAP-80 Sample Locations

I HEREBY STATE THAT THIS MAP IS BASED ON AN ACTUAL FIELD SURVEY PREPARED BY ME. THE SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF. ALL DIMENSIONS GIVEN ARE EXPRESSED IN FEET AND DECIMAL PARTS THEREOF. BEARINGS ARE BASED ON GRID NORTH OF THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD 83 DATUM.

CHRISTOPHER J. DEMPSEY
PROFESSIONAL SURVEYOR NO. 6914
DATE OF SURVEY: MAY 11, 2011

DATE SIGNED:_____

STATE OF OHIO
CHRISTOPHER J. DEMPSEY
S-6914
REGISTERED
PROFESSIONAL SURVEYOR

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 1-800-362-2764
OHIO UTILITIES PROTECTION SERVICE

LOCATION SURVEY
FOR
GEOSEARCHES
OF
THE RAVENNA ARSENAL

JOB NO.	HORZ. SCALE	VERT. SCALE	DRAWN BY	FIELD CREW
8002	1" = 50'	NONE	MS	MS-SB
LAST PLOT DATE	DATE OF SURVEY			CHECKED BY
May 16, 2011	MAY 11, 2011			CJD

SHEET 1 OF 1

DEMPSEY / SURVEYING / COMPANY
P 216/226/1130 F 216/226/1131
12815 DETROIT AVENUE
CLEVELAND, OH 44107-2835
www.dempseysurvey.com

Drawing File: K:\8000-8099\8002\8002.dwg May 16, 2011 - 9:46am

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset
60000	566262.5	2367606	0+91.8	445.7
60001	566430.3	2367596	0+83.7	277.7
60002	566436	2367570	0+58.1	271.7
60003	566434.2	2367557	0+44.9	273.2
60004	566414.2	2367550	0+37.5	293.1
60005	566362.4	2367509	-0+4.2	344.3
60006	566445.7	2367495	-0+17.0	260.8
60007	566483.7	2367544	0+32.7	223.6
60008	566488.6	2367560	0+49.2	218.9
60009	566496.2	2367580	0+68.7	211.6
60010	566497.1	2367585	0+74.5	210.8
60011	566518.2	2367615	1+04.4	190.2
60012	566528.7	2367582	0+71.8	179.1
60013	566547.6	2367582	0+71.5	160.3
60014	566552.3	2367594	0+83.6	155.7
60015	566559.9	2367584	0+73.9	147.9
60016	566585.1	2367589	0+79.1	122.9
60017	566555.9	2367622	1+12.1	152.5
60018	566592.1	2367651	1+41.9	116.8
60019	566708.3	2367593	0+85.0	-0.29
60020	566712.3	2367582	0+74.6	-4.44
60021	566707.4	2367708	2+00.5	2.4
60022	566505.4	2367646	1+35.0	203.4
60023	566503.1	2367659	1+47.9	205.9
60024	566388.6	2367836	3+23.1	323.1
60025	566386.8	2367853	3+40.1	325.1
60026	566356.1	2367857	3+44.1	355.9
60027	566352	2367833	3+19.4	359.6
60028	566313.3	2367782	2+68.2	397.5
60029	566253.8	2367859	3+44.4	458.2
60030	566259.6	2367884	3+69.7	452.8
60031	566227.9	2367909	3+94.2	484.9
60032	566145.3	2367956	4+39.6	568.2
60033	566112.4	2367985	4+68.0	601.5
60034	566111.7	2367974	4+57.1	602
60035	566102.4	2367952	4+34.6	611
60036	566075.1	2367970	4+52.4	638.6

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

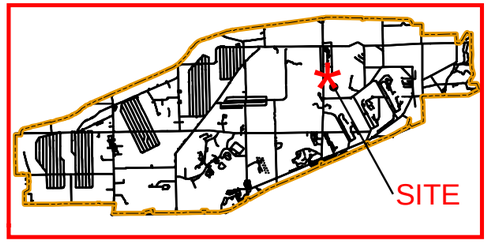
Flag	Northing	Easting	Station	Offset
60037	566081.3	2368007	4+90.2	633
60038	566067	2368017	4+99.9	647.4
60039	566051.2	2368007	4+88.8	663
60040	566046.5	2367995	4+77.7	667.6
60041	566049.4	2367989	4+71.4	664.6
60042	566056.5	2367995	4+77.1	657.6
60043	566060.5	2367991	4+73.0	653.5
60044	566056.7	2367987	4+69.8	657.3
60045	566027	2368011	4+92.4	687.3
60046	566029.1	2368069	5+50.7	686.1
60047	566019.2	2368073	5+54.4	696
60048	565997	2368100	5+81.9	718.7
60056	566505.7	2367899	3+88.6	207
60057	566501.1	2367924	4+13.2	212
60058	566497.5	2367928	4+16.9	215.6
60059	566507.5	2367973	4+62.7	206.3
60088	566133.8	2367936	4+19.5	579.4
60089	566155.1	2367911	3+94.7	557.7
60090	566169.1	2367904	3+88.1	543.6
60091	566177.8	2367935	4+18.7	535.4
60093	566282.5	2367949	4+34.5	430.9
60094	566291.9	2367940	4+26.2	421.4
60095	566294.9	2367939	4+24.8	418.3
60096	566291.5	2367948	4+33.8	421.9
60097	566295.7	2367957	4+42.5	417.9
60098	566294.4	2367961	4+46.7	419.2
60099	566303.3	2367953	4+39.4	410.2
60100	566311.1	2367955	4+40.9	402.4
60101	566310.5	2367944	4+30.0	402.8
60102	566309.2	2367936	4+22.1	404
60103	566326	2367971	4+57.7	387.8
60104	566310.1	2367985	4+71.3	403.9
60105	566418.7	2367963	4+50.8	294.9
60106	566419.6	2367953	4+41.2	293.9
60107	566416.2	2367937	4+24.8	297
60108	566411.8	2367926	4+14.3	301.3
60109	566274.9	2368034	5+19.3	439.8

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset
60110	566221.2	2368025	5+09.4	493.4
60111	566216.8	2368017	5+01.6	497.7
60112	566216.4	2368014	4+98.6	498
60113	566213.3	2368013	4+97.3	501.1
60114	566204.5	2368019	5+03.6	510
60115	566200.3	2367997	4+82.0	513.8
60116	566193.5	2367985	4+69.3	520.4
60117	566184	2368058	5+42.2	531
60118	566131.3	2368069	5+52.1	583.9
60119	566110	2368076	5+59.5	605.3
60120	566169.3	2368108	5+91.9	546.5
60121	566192.7	2368112	5+96.1	523.1
60122	566151.4	2368173	6+56.6	565.3
60123	566127.4	2368201	6+84.7	589.8
60124	566067.1	2368231	7+13.7	650.6
60125	566052.1	2368336	8+18.0	667.1
60126	566024.9	2368334	8+16.2	694.4
60127	566017.8	2368338	8+19.8	701.5
60155	566597.7	2367707	1+97.8	112
60157	566628	2367797	2+88.1	83.2
60158	566626.1	2367815	3+06.5	85.3
60159	566614.2	2367815	3+05.4	97.2
60160	566605.8	2367813	3+04.0	105.5
60161	566599.4	2367811	3+01.8	111.9
60162	566599.9	2367806	2+96.5	111.4
60163	566598.1	2367798	2+88.5	113
60164	566611.1	2367795	2+86.0	100
60165	566566.7	2367839	3+29.6	145.1
60166	566570.8	2367846	3+36.5	141.1

PT,NORTHING,EASTING,DESC NAD83 UTM	PT,NORTHING,EASTING,DESC NAD83 OHIO SPC
105,4562388.310,495917.985,NWC1	105,566638.73,2367776.12,NWC1
106,4562387.996,495936.264,NEC1	106,566638.73,2367836.12,NEC1
107,4562371.849,495935.987,SEC1	107,566585.73,2367836.12,SEC1
108,4562372.164,495917.707,SWC1	108,566585.73,2367776.12,SWC1
109,4562380.080,495926.986,CENT C1	109,566612.23,2367806.12,CENT C1
110,4562295.522,495961.917,NWC2	110,566336.73,2367925.52,NWC2
111,4562295.182,495981.720,NEC2	111,566336.73,2367990.52,NEC2
112,4562276.903,495981.405,SEC2	112,566276.73,2367990.52,SEC2
113,4562277.243,495961.603,SWC2	113,566276.73,2367925.52,SWC2
114,4562286.213,495971.661,CENT C2	114,566306.73,2367958.02,CENT C2
115,4562266.214,495978.467,NWC3	115,566241.49,2367981.48,NWC3
116,4562265.900,495996.746,NEC3	116,566241.49,2368041.48,NEC3
117,4562249.753,495996.468,SEC3	117,566188.49,2368041.48,SEC3
118,4562250.068,495978.189,SWC3	118,566188.49,2367981.48,SWC3
119,4562257.984,495987.467,CENT C3	119,566214.99,2368011.48,CENT C3
120,4562249.278,495953.208,NWC4	120,566184.49,2367899.55,NWC4
121,4562248.964,495971.487,NEC4	121,566184.49,2367959.55,NEC4
122,4562230.076,495971.162,SEC4	122,566122.49,2367959.55,SEC4
123,4562230.390,495952.883,SWC4	123,566122.49,2367899.55,SWC4
124,4562239.677,495962.185,CENT C4	124,566153.49,2367929.55,CENT C4
125,4562214.681,495975.520,NWC5	125,566072.22,2367974.72,NWC5
126,4562214.451,495988.925,NEC5	126,566072.22,2368018.72,NEC5
127,4562202.874,495988.726,SEC5	127,566034.22,2368018.72,SEC5
128,4562203.104,495975.321,SWC5	128,566034.22,2367974.72,SWC5
129,4562208.778,495982.123,CENT C5	129,566053.22,2367996.72,CENT C5
130,4562208.219,496080.450,NWC6	130,566056.69,2368318.27,NWC6
131,4562207.909,496094.116,NEC6	131,566056.69,2368364.27,NEC6
132,4562193.895,496093.875,SEC6	132,566010.69,2368364.27,SEC6
133,4562194.136,496079.861,SWC6	133,566010.69,2368318.27,SWC6
134,4562201.022,496086.988,CENT C6	134,566033.69,2368341.27,CENT C6
135,4562324.095,495959.057,NWC7	135,566430.33,2367914.52,NWC7
136,4562323.781,495977.336,NEC7	136,566430.33,2367974.52,NEC7
137,4562314.641,495977.179,SEC7	137,566400.33,2367974.52,SEC7
138,4562314.956,495958.900,SWC7	138,566400.33,2367914.52,SWC7
139,4562319.368,495968.118,CENT C7	139,566415.33,2367944.52,CENT C7
140,4562366.464,495848.677,NWC8	140,566563.13,2367549.92,NWC8
141,4562366.055,495872.440,NEC8	141,566563.13,2367627.92,NEC8
142,4562344.120,495872.062,SEC8	142,566491.13,2367627.92,SEC8
143,4562344.529,495848.300,SWC8	143,566491.13,2367549.92,SWC8
144,4562355.292,495860.370,CENT C8	144,566527.13,2367588.92,CENT C8

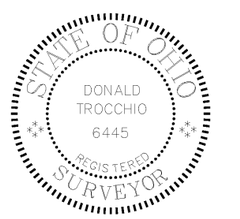
Camp Ravenna Joint Military Training Center



Portage & Trumbull County

LOCATOR MAP

Ohio Army National Guard



Produced in April 2016 for:

PIKA INTERNATIONAL, INC

GROUP 2 PROPELLANT CAN TOPS
INVESTIGATION SITE CC RVAAP-80

Multi Increment Sample Areas

Projection Datum is NAD83, Ohio State Plane Rectangular Grid, North Zone

0 75 150 225 Feet

Bar Scale in Feet

VISTA SCIENCES CORPORATION

Camp Ravenna JMTC
1438 State Route 534 SW
Newton Falls, OH 44444
Don Trocchio, PS
don.trocchio@vistasciences.com

MGRS 17T NF01946150 (NAD83)

PROPELLANT CAN TOPS (RVAAP-80) SAMPLE AREAS COORDINATES

Prepared for PIKA Inc. by Vista Sciences Corporation

April 2016

Sample Area	Survey Point No.	Survey Point Description	UTM Coordinates, NAD83		Ohio State Plane Coordinates, NAD83	
			NORTHING	EASTING	NORTHING	EASTING
C1	105	NWC1	4,562,388.310	495,917.985	566,638.730	2,367,776.120
	106	NEC1	4,562,387.996	495,936.264	566,638.730	2,367,836.120
	107	SEC1	4,562,371.849	495,935.987	566,585.730	2,367,836.120
	108	SWC1	4,562,372.164	495,917.707	566,585.730	2,367,776.120
	109	Cent C1	4,562,380.080	495,926.986	566,612.230	2,367,806.120
C2	110	NWC2	4,562,295.522	495,961.917	566,336.730	2,367,925.520
	111	NEC2	4,562,295.182	495,981.720	566,336.730	2,367,990.520
	112	SEC2	4,562,276.903	495,981.405	566,276.730	2,367,990.520
	113	SWC2	4,562,277.243	495,961.603	566,276.730	2,367,925.520
	114	CENT C2	4,562,286.213	495,971.661	566,306.730	2,367,958.020
C3	115	NWC3	4,562,266.214	495,978.467	566,241.490	2,367,981.480
	116	NEC3	4,562,265.900	495,996.746	566,241.490	2,368,041.480
	117	SEC3	4,562,249.753	495,996.468	566,188.490	2,368,041.480
	118	SWC3	4,562,250.068	495,978.189	566,188.490	2,367,981.480
	119	CENT C3	4,562,257.984	495,987.467	566,214.990	2,368,011.480
C4	120	NWC4	4,562,249.278	495,953.208	566,184.490	2,367,899.550
	121	NEC4	4,562,248.964	495,971.487	566,184.490	2,367,959.550
	122	SEC4	4,562,230.076	495,971.162	566,122.490	2,367,959.550
	123	SWC4	4,562,230.390	495,952.883	566,122.490	2,367,899.550
	124	CENT C4	4,562,239.677	495,962.185	566,153.490	2,367,929.550
C5	125	NWC5	4,562,214.681	495,975.520	566,072.220	2,367,974.720
	126	NEC5	4,562,214.451	495,988.925	566,072.220	2,368,018.720
	127	SEC5	4,562,202.874	495,988.726	566,034.220	2,368,018.720
	128	SWC5	4,562,203.104	495,975.321	566,034.220	2,367,974.720
	129	CENT C5	4,562,208.778	495,982.123	566,053.220	2,367,996.720

PROPELLANT CAN TOPS (RVAAP-80) SAMPLE AREAS COORDINATES

Prepared for PIKA Inc. by Vista Sciences Corporation

April 2016

Sample Area	Survey Point No.	Survey Point Description	UTM Coordinates, NAD83		Ohio State Plane Coordinates, NAD83	
			NORTHING	EASTING	NORTHING	EASTING
C6	130	NWC6	4,562,208.219	496,080.450	566,056.690	2,368,318.270
	131	NEC6	4,562,207.909	496,094.116	566,056.690	2,368,364.270
	132	SEC6	4,562,193.895	496,093.875	566,010.690	2,368,364.270
	133	SWC6	4,562,194.136	496,079.861	566,010.690	2,368,318.270
	134	CENT C6	4,562,201.022	496,086.988	566,033.690	2,368,341.270
C7	135	NWC7	4,562,324.095	495,959.057	566,430.330	2,367,914.520
	136	NEC7	4,562,323.781	495,977.336	566,430.330	2,367,974.520
	137	SEC7	4,562,314.641	495,977.179	566,400.330	2,367,974.520
	138	SWC7	4,562,314.956	495,958.900	566,400.330	2,367,914.520
	139	CENT C7	4,562,319.368	495,968.118	566,415.330	2,367,944.520
C8	140	NWC8	4,562,366.464	495,848.677	566,563.130	2,367,549.920
	141	NEC8	4,562,366.055	495,872.440	566,563.130	2,367,627.920
	142	SEC8	4,562,344.120	495,872.062	566,491.130	2,367,627.920
	143	SWC8	4,562,344.529	495,848.300	566,491.130	2,367,549.920
	144	CENT C8	4,562,355.292	495,860.370	566,527.130	2,367,588.920

APPENDIX E: SCRAP METAL MDAS CERTIFICATION AND RECYCLING RECORDS

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60000	566262.5	2367606	0+91.8	445.7	3/29/2016	4 Prop can lids
60001	566430.3	2367596	0+83.7	277.7	3/28/2016	5 Prop can lids
60002	566436	2367570	0+58.1	271.7	3/28/2016	3 Prop can lids
60003	566434.2	2367557	0+44.9	273.2	3/28/2016	Scrap metal
60004	566414.2	2367550	0+37.5	293.1	3/28/2016	Scrap nuts, bolts and rod
60005	566362.4	2367509	-0+4.2	344.3	3/28/2016	3 metal plates
60006	566445.7	2367495	-0+17.0	260.8	3/28/2016	Nothing Found
60007	566483.7	2367544	0+32.7	223.6	3/28/2016	Scrap Metal
60008	566488.6	2367560	0+49.2	218.9	3/28/2016	5 Prop can lids
60009	566496.2	2367580	0+68.7	211.6	3/28/2016	10 Prop can lids
60010	566497.1	2367585	0+74.5	210.8	3/28/2016	10 Prop can lids
60011	566518.2	2367615	1+04.4	190.2	3/28/2016	1 Prop Can Lid
60012	566528.7	2367582	0+71.8	179.1	3/28/2016	1 Prop Can Lid
60013	566547.6	2367582	0+71.5	160.3	3/28/2016	5 Prop can lids
60014	566552.3	2367594	0+83.6	155.7	3/28/2016	Metal Plate
60015	566559.9	2367584	0+73.9	147.9	3/28/2016	Metal Pipe
60016	566585.1	2367589	0+79.1	122.9	3/28/2016	Metal Plate
60017	566555.9	2367622	1+12.1	152.5	3/28/2016	1 Prop Can Lid
60018	566592.1	2367651	1+41.9	116.8	3/28/2016	Bolt
60019	566708.3	2367593	0+85.0	-0.29	3/28/2016	1 Prop Can Lid
60020	566712.3	2367582	0+74.6	-4.44	3/28/2016	2 Prop Can Lids
60021	566707.4	2367708	2+00.5	2.4	3/28/2016	New construction (manhole) replaces previous anomoly
60022	566505.4	2367646	1+35.0	203.4	3/28/2016	1 Prop Can Lid
60023	566503.1	2367659	1+47.9	205.9	3/28/2016	Nothing Found
60024	566388.6	2367836	3+23.1	323.1	3/28/2016	Propellant Canister Lid x 1
60025	566386.8	2367853	3+40.1	325.1	3/28/2016	Canister Rings x 2
60026	566356.1	2367857	3+44.1	355.9	3/28/2016	Propellant Canister Lids x 2
60027	566352	2367833	3+19.4	359.6	3/29/2016	Bed of nails
60028	566313.3	2367782	2+68.2	397.5	3/29/2016	Propellant Canister Lid 1
60029	566253.8	2367859	3+44.4	458.2	3/29/2016	Propellant Canister Lid 1
60030	566259.6	2367884	3+69.7	452.8	3/29/2016	Propellant Canister Lids x 38
60031	566227.9	2367909	3+94.2	484.9	3/29/2016	Metal Scrap 2"x2"x1/4"
60032	566145.3	2367956	4+39.6	568.2	3/29/2016	1 Prop Can Lid

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60033	566112.4	2367985	4+68.0	601.5	3/29/2016	1 Prop Can Lid
60034	566111.7	2367974	4+57.1	602	3/29/2016	5 Prop can lids
60035	566102.4	2367952	4+34.6	611	3/29/2016	1 Prop Can Lid
60036	566075.1	2367970	4+52.4	638.6	3/29/2016	1 Prop Can
60037	566081.3	2368007	4+90.2	633	3/29/2016	1 Prop Can Lid, 8 Prop Cans
60038	566067	2368017	4+99.9	647.4	3/29/2016	Prop Cans and Lids
60039	566051.2	2368007	4+88.8	663	3/29/2016	Prop Can and Lid
60040	566046.5	2367995	4+77.7	667.6	3/29/2016	Prop Can and Lid
60041	566049.4	2367989	4+71.4	664.6	3/29/2016	Prop Can and Lid
60042	566056.5	2367995	4+77.1	657.6	3/29/2016	Prop Can and Lid
60043	566060.5	2367991	4+73.0	653.5	3/29/2016	Prop Can and Lid
60044	566056.7	2367987	4+69.8	657.3	3/29/2016	Prop Can and Lid
60045	566027	2368011	4+92.4	687.3	3/29/2016	T Post
60046	566029.1	2368069	5+50.7	686.1	3/29/2016	Prop Can Lid
60047	566019.2	2368073	5+54.4	696	3/29/2016	Prop Can
60048	565997	2368100	5+81.9	718.7	3/29/2016	Prop Can
60056	566505.7	2367899	3+88.6	207	3/28/2016	Metal Scrap 3"x2"x1.5", Metal Scrap 2"x2"x1", 1Railroad Spike, 1 Propellant Canister Lid
60057	566501.1	2367924	4+13.2	212	3/28/2016	Propellant Canister Lids x 12
60058	566497.5	2367928	4+16.9	215.6	3/28/2016	Propellant Canister Lids x 11
60059	566507.5	2367973	4+62.7	206.3	3/28/2016	Propellant Canister Lid x 1
60088	566133.8	2367936	4+19.5	579.4	3/29/2016	Prop Can Tube
60089	566155.1	2367911	3+94.7	557.7	3/29/2016	Prop Can and Lid
60090	566169.1	2367904	3+88.1	543.6	3/29/2016	20 prop Cans and Lids
60091	566177.8	2367935	4+18.7	535.4	3/29/2016	2 Prop Can Tubes
60093	566282.5	2367949	4+34.5	430.9	3/30/2016	3 Prop can lids and 2 tubes
60094	566291.9	2367940	4+26.2	421.4	3/29/2016	Propellant Canister Lids x 38
60095	566294.9	2367939	4+24.8	418.3	3/29/2016	Propellant Canister Lids x 2, Metal scrap 1.5"x 1.5"x 1"
60096	566291.5	2367948	4+33.8	421.9	3/29/2016	Propellant Canister Lids x 5
60097	566295.7	2367957	4+42.5	417.9	3/29/2016	Propellant Canister Lids x 3
60098	566294.4	2367961	4+46.7	419.2	3/29/2016	Propellant Canister Lids x 2
60099	566303.3	2367953	4+39.4	410.2	3/29/2016	Propellant Canister Lids x 6, 1 Canister Body

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60100	566311.1	2367955	4+40.9	402.4	3/29/2016	Propellant Canister Lid x 1, 1 Canister Body, 4 Ring pieces
60101	566310.5	2367944	4+30.0	402.8	3/29/2016	Propellant Canister Lids x 7, 1 Canister Body
60102	566309.2	2367936	4+22.1	404	3/29/2016	Propellant Canister Lid x 1
60103	566326	2367971	4+57.7	387.8	3/29/2016	Propellant Canister Lids x 3, 1 Canister ring
60104	566310.1	2367985	4+71.3	403.9	3/30/2016	2 prop Can Lids and locking ring
60105	566418.7	2367963	4+50.8	294.9	3/28/2016	1"x18"x 1/4" Metal Strap
60106	566419.6	2367953	4+41.2	293.9	3/28/2016	1 Deteriorated Canister Lid
60107	566416.2	2367937	4+24.8	297	3/28/2016	Tri Canister Lid x 1, Canister Band
60108	566411.8	2367926	4+14.3	301.3	3/28/2016	Canister x 1, Canister Ring x 1, Propellant Canister Lids x 7
60109	566274.9	2368034	5+19.3	439.8	3/29/2016	1 Propellant Lid Locking handle
60110	566221.2	2368025	5+09.4	493.4	3/29/2016	Propellant Canister Lids x 22
60111	566216.8	2368017	5+01.6	497.7	3/29/2016	Propellant Canister Lids x 20
60112	566216.4	2368014	4+98.6	498	3/29/2016	Propellant Canister Lids x 20
60113	566213.3	2368013	4+97.3	501.1	3/29/2016	Propellant Canister Lids x 20
60114	566204.5	2368019	5+03.6	510	3/29/2016	Propellant Canister Lids x 8
60115	566200.3	2367997	4+82.0	513.8	3/29/2016	Propellant Canister Lids x 21
60116	566193.5	2367985	4+69.3	520.4	3/29/2016	Propellant Canister Lids x 1, Propellant Canister x 1
60117	566184	2368058	5+42.2	531	3/29/2016	Propellant Canister Lids x 4, Propellant Canister x 2
60118	566131.3	2368069	5+52.1	583.9	3/29/2016	6 Prop Can Lids
60119	566110	2368076	5+59.5	605.3	3/29/2016	6 Prop Can Lids
60120	566169.3	2368108	5+91.9	546.5	3/29/2016	2 T Posts
60121	566192.7	2368112	5+96.1	523.1	3/29/2016	Nothing Found
60122	566151.4	2368173	6+56.6	565.3	3/29/2016	Barbed Wire
60123	566127.4	2368201	6+84.7	589.8	3/29/2016	Prop Can Tube
60124	566067.1	2368231	7+13.7	650.6	3/29/2016	Prop Can and Lid
60125	566052.1	2368336	8+18.0	667.1	3/29/2016	Nothing Found
60126	566024.9	2368334	8+16.2	694.4	3/29/2016	Prop Can and Lid
60127	566017.8	2368338	8+19.8	701.5	3/29/2016	Nothing Found
60155	566597.7	2367707	1+97.8	112	3/28/2016	Prop Can and Lid
60157	566628	2367797	2+88.1	83.2	3/28/2016	Propellant Canister Lid
60158	566626.1	2367815	3+06.5	85.3	3/28/2016	Propellant Canister Lid

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60159	566614.2	2367815	3+05.4	97.2	3/28/2016	Propellant Canister Lids x 38
60160	566605.8	2367813	3+04.0	105.5	3/28/2016	Propellant Canister Lids x 25
60161	566599.4	2367811	3+01.8	111.9	3/28/2016	Propellant Canister Lids x 2
60162	566599.9	2367806	2+96.5	111.4	3/28/2016	Nothing Found
60163	566598.1	2367798	2+88.5	113	3/28/2016	Nothing Found
60164	566611.1	2367795	2+86.0	100	3/30/2016	Nothing Found
60165	566566.7	2367839	3+29.6	145.1	3/28/2016	24" Pipe Wrench, 1- Canister, Propellant Canister Lids x 9
60166	566570.8	2367846	3+36.5	141.1	3/28/2016	Geo Rocks

CLEAR

DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

DI	RI FROM	UI	QUANTITY	SUPPLEMENTARY ADDRESS	SIG	FUND	DISTRIBUTION	PROJECT	PRI	REQD DEL DATE	ADV	RI
RAV		LB	1760		S	XP			H	G		

1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO
UNIT PRICE DOLLARS 0 CTS 00; DOLLARS 0 CTS 00	RVAPP Portage/Trumble, Ohio	Falls Recycling 1536A 1st St. NewtonFalls Oh
	4. MARK FOR	

5. DOC DATE	6. NMFC	7. FRT RATE	8. TYPE CARGO	9. PS
30 Mar16				U

10. QTY. REC'D	11. UP	12. UNIT WEIGHT	13. UNIT CUBE	14. UFC	15. SL
					0

16. FREIGHT CLASSIFICATION NOMENCLATURE

17. ITEM NOMENCLATURE: Debris, Scrap Metal

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
		1760	

22. RECEIVED BY	23. DATE RECEIVED
Falls Recycling (See PO receipt)	03/30/2016

24. DOCUMENT NUMBER & SUFFIX (30-44)

Client: Louisville District COE
Contractor: PIKA International Inc.
Contract #: W912QR-12-F-0212

25. NATIONAL STOCK NO. & ADD (8-22)

Scrap Metal

Load Number - RVAAP-80-001

26. RIC (4-6) UI (23-24) QTY (25-29) CON CODE (71) DIST (55-56) UP (74-80)

"This certifies and verifies that the material listed has either 1) been subjected to a 100-percent inspection and an independent 100-percent re-inspection, or 2) been processed by a DDESB-approved process with an appropriate post-processing inspection. To the best of our knowledge and belief, the material listed is free of explosive hazards and is Material Documented as Safe (MDAS)"

27. ADDITIONAL DATA

Cameron Wenzel, Senior UXO Supervisor
PIKA International, Inc.
Certifier's Signature
Ph# (281) 543-3316

Grady Bendel, UXOQC Specialist
PIKA International, Inc
Verifier's signature
Ph # (540) 354-9109

1

PREVIOUS EDITION MAY BE USED

FormFlow (DLA)

DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

DI	RI FROM	UI	QUANTITY	SUPPLEMENTARY ADDRESS	SIG	FUND	DISTRIBUTION	PROJECT	PRI	REQD DEL DATE	ADV	RI
RAV		LB	1760		S	XP			H	G		

1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO
UNIT PRICE DOLLARS 0 CTS 00; DOLLARS 0 CTS 00	RVAPP Portage/Trumble, Ohio	Falls Recycling 1536A 1st St. NewtonFalls Oh
	4. MARK FOR	

5. DOC DATE	6. NMFC	7. FRT RATE	8. TYPE CARGO	9. PS
30 Mar16				U

10. QTY. REC'D	11. UP	12. UNIT WEIGHT	13. UNIT CUBE	14. UFC	15. SL
					0

16. FREIGHT CLASSIFICATION NOMENCLATURE

17. ITEM NOMENCLATURE: Debris, Scrap Metal

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
		1760	

22. RECEIVED BY	23. DATE RECEIVED
Falls Recycling (See PO receipt)	03/30/2016

24. DOCUMENT NUMBER & SUFFIX (30-44)

Client: Louisville District COE
Contractor: PIKA International Inc.
Contract #: W912QR-12-F-0212

25. NATIONAL STOCK NO. & ADD (8-22)

Scrap Metal

Load Number - RVAAP-80-001

26. RIC (4-6) UI (23-24) QTY (25-29) CON CODE (71) DIST (55-56) UP (74-80)

"This certifies and verifies that the material listed has either 1) been subjected to a 100-percent inspection and an independent 100-percent re-inspection, or 2) been processed by a DDESB-approved process with an appropriate post-processing inspection. To the best of our knowledge and belief, the material listed is free of explosive hazards and is Material Documented as Safe (MDAS)"

27. ADDITIONAL DATA

Cameron Wenzel, Senior UXO Supervisor
PIKA International, Inc.
Certifier's Signature
Ph# (281) 543-3316

Grady Bendel, UXOQC Specialist
PIKA International, Inc
Verifier's signature
Ph # (540) 354-9109

PREVIOUS EDITION MAY BE USED

FormFlow (DLA)

2

Falls Recycling LLC.

1536A 1st street
Newton Falls, OH 44444

Phone # 330-872-0402
Fax # 330-872-0595

Purchase Order

Date	P.O. No.
3/30/2016	72844

Vendor
Cameron Wenzel 1063 Overton Hills Dr Hendersonville NC 28739

Ship To
Falls Recycling LLC. 1536A 1st Street Newton Falls, Ohio 44444 WWW.FALLSRECYCLING.COM

Item	Description	Qty	U/M	Rate	Amount
misc FE	miscellaneous iron	1,760		0.044	77.44

Total $77.44

11060
9300

X

By Signing, You Attest That Material Being Sold Is Not Stolen Or Of False Ownership

APPENDIX F: IDW DRUM DISPOSAL RECORDS

PIKA INTERNATIONAL, INC.

April 28, 2016

Jay Trumble
U.S Army Corps of Engineers, Louisville District
ATTN: CELRL-PM-P-E
600 Martin Luther King Jr. Place
Louisville, KY 40202-0059

Reference: Contract No. W912QR-12-F-0212, Site Inspection At Compliance Restoration Site CC-RVAAP-80 Group 2 Propellant Can Tops, Camp Ravenna Joint Military Training Center, Ravenna, Ohio

Subject: Contract Line Item (CLIN) 2, Task 3 – Implementation of Work Plan, Management and Disposal of Investigation Derived Wastes

Dear Mr. Trumble:

Soil investigative activities in accordance with the Revised Final Field Sampling Plan Addendum for Site Inspection at Compliance Restoration Site CC RVAAP-80, Group 2, Propellant Can Tops Area (January 2016) (herein referred to as the SAP Addendum) were performed from April 11, 2016 through April 13, 2016 (Prop Can Area Investigation). These activities have resulted in the generation of Investigation-Derived Waste (IDW) solids including soil cuttings, plastic Geoprobe liners and PPE sampling gloves. The purpose of this letter is to characterize and classify IDW for disposal and to propose methods for disposing the IDW.

This letter report includes a summary of IDW generated, the origin of the IDW (Table 1), as well as proposed classification and recommendations for disposal of the IDW (Table 2). This letter report follows guidance established by the following:

1) The Facility-Wide Sampling and Analysis Plan (USACE 2011) (herein referred to at the Facility-Wide SAP); and
2) The SAP Addendum for this project;

One distinct IDW waste stream was sampled as part of the Prop Can Area Investigation field activities. The waste stream was composited and sampled on April 13, 2016 as per the Camp Ravenna Waste Management Guidelines (dated 30 March 2015) and the requirements outlined in Section 7.0 of the Facility-wide SAP and SAP Addendum. IDW stream generated was:

- Two (2) 55-gallon, open top drums containing soil cuttings, Geoprobe sample liners and PPE gloves.

PIKA INTERNATIONAL, INC.

Table 1
Summary of Sampled Investigation-Derived Wastes from Sampling Activities for the Prop Can Area Investigation.

Container Number	Container Type and Size	Contents	Generation Date	Sample ID	Sample Date
PIKA-IDW-1 and PIKA-IDW-2	55 Gallon Steel, Open Top Drum	Soil cuttings, plastic Geoprobe liners and PPE gloves	4-11-16 – 4-13-16	PCTss-WC001-SO	4-13-16

IDW Discussion

Per Section 7.0 of the Facility-wide SAP and the SAP Addendum, one composite waste sample was collected for Toxicity Characteristic Leaching Procedure (TCLP) VOC, SVOC, Metals, Pesticides, Herbicides, Total Sulfide, Total Cyanide, Corrosivity(pH) and Flashpoint and submitted for laboratory analysis to characterize the waste stream for disposal. The sample (PCTss-WC001-SO) characterized two (2), 55-gallon drums containing soil cuttings, Geoprobe sample liners and PPE gloves. Upon receipt of analytical results from the laboratory, the analytical results were reviewed to determine if the waste was potentially hazardous. This review consisted of a comparison of the analytical results against the TCLP criteria presented in Table 7-1, Maximum Concentration of Contaminants for the Toxicity Characteristic (40 CFR 261.24), presented in the Facility-Wide SAP (USACE 2011) and Resource Conservation Recovery Act (RCRA) Hazardous Waste regulations 40 CFR 261 – 265.

Attachment 1 summarizes the analytical laboratory data and compares them to the applicable RCRA TCLP Limits for the IDW sample collected during the Prop Can Areas Investigation field activities. The results are summarized below:

1) All analytical results were below quantitative limits;
2) The pH for the waste is 5.73 S. U., which is in the normal range for soils and precipitation;
3) The flash point was >200◦F.

Given the observed analytical results, it is recommended that IDW stream be classified as nonhazardous, non-contaminated.

Recommended Disposal Pathway for IDW

Table 2 presents the disposal pathway identified as a result of IDW characterization data. Please note that this IDW has been characterized under provisions of the Facility-Wide SAP and SAP Addendum No. 1 using TCLP analyses and process knowledge. PIKA recommends that this

IDW be transported and disposed of as non-hazardous, non-contaminated waste by Republic Services – Carbon Limestone Landfill, in Lowellville, Ohio.

Table 2
Summary of Final Waste Classification and Recommended Disposal

NON-Hazardous Waste			
Containers	**Medium**	**Waste Criterion**	**Disposal Recommendation**
PIKA-IDW-1 and PIKA-IDW-2	Solid	Solid Waste	Permitted Solid Waste Facility

Since RVAAP Restoration Program (at Camp Ravenna), under RCRA, is the generator of this material, PIKA requests concurrence or direction on the waste classification and recommended disposal pathways prior to disposal. Following your concurrence, we will proceed with the appropriate waste disposal.

If you have any questions or need clarifications, please feel free to contact us at 330-352-4822.

Sincerely,

PIKA INTERNATIONAL, INC.

Richard C. Callahan

Richard Callahan
Project Manager

Cc: Kathryn Tait – OHARNG
Kevin Sedlak – ARNG

PIKA INTERNATIONAL, INC.

ATTACHMENT 1
ANALYTICAL RESULTS SUMMARY TABLE
AND
COMPARISON TO RCRA TCLP LIMITS

12723 Capricorn Drive #500 | Stafford, Texas 77477 | 281-340-5525 tel 281-340-5533 fax
www.pikainc.com

Attachment 1 - Waste Characterization Results
PIKA IDW Sample

Contaminant	Units	TCLP Limit (mg/L)	Detection Limit (mg/L)	Sample Results	Qualifier
				PCTss-WC001-SO	
VOCs Method 8260B - TCLP					
1,1-Dichloroethene	mg/L	0.7	0.025	0.025	U
1,2-Dichloroethane	mg/L	0.5	0.025	0.025	U
2-Butanone (MEK)	mg/L	200	0.25	0.25	U
Benzene	mg/L	0.5	0.025	0.025	U
Carbon Tetrachloride	mg/L	0.5	0.025	0.025	U*
Chlorobenzene	mg/L	100.0	0.025	0.025	U
Chloroform	mg/L	6	0.025	0.025	U
Tetrachloroethene	mg/L	0.7	0.025	0.025	U
Trichloroethene	mg/L	0.5	0.025	0.025	U
Vinyl Chloride	mg/L	0.2	0.025	0.025	U
VOCs Method 8270C - TCLP					
3 & 4 Methylphenol (m & p-Cresol)	mg/L	200	0.004	0.004	U
1,4-Dichlorobenzene	mg/L	7.5	0.004	0.004	U
2,4-Dinitrotoluene	mg/L	0.13	0.004	0.004	U
Hexachlorobenzene	mg/L	0.13	0.0008	0.0008	U
Hexachlorobutadiene	mg/L	0.5	0.004	0.004	U
Hexachloroethane	mg/L	3.0	0.004	0.004	U
2-Methylphenol (o-Cresol)	mg/L	200	0.004	0.004	U
Nitrobenzene	mg/L	2.0	0.004	0.004	U
Pentachlorophenol	mg/L	100.0	0.016	0.016	U
Pyridine	mg/L	5.0	0.004	0.004	U
2,4,5-Trichlorophenol	mg/L	400.0	0.004	0.004	U
2,4,6-Trichlorophenol	mg/L	2.0	0.004	0.004	U
Pesticides Method 8081A - TCLP					
Chlordane	mg/L	0.03	0.005	0.005	U
Endrin	mg/L	0.02	0.0005	0.0005	U
Lindane (gamma-BHC)	mg/L	0.4	0.0005	0.0005	U
Heptachlor	mg/L	0.008	0.0005	0.0005	U
Heptachlor Epoxide	mg/L	0.008	0.0005	0.0005	U
Methoxychlor	mg/L	10.0	0.001	0.001	U
Toxaphene	mg/L	0.5	0.02	0.02	U
Herbicides Method 8151A - TCLP					
2,4-D	mg/L	10.0	0.004	0.004	U
Silvex (2,4,5-TP)	mg/L	1.0	0.001	0.001	U
Metals 6010B - TCLP					
Aesenic	mg/L	5.0	0.5	**0.0031**	**J**
Barium	mg/L	100.0	10	**0.32**	**J B**
Cadmium	mg/L	1.0	0.1	**0.0013**	**J**
Chromium	mg/L	5.0	0.5	**0.00087**	**J B**
Lead	mg/L	5.0	0.5	**0.0027**	**J**
Selenium	mg/L	1.0	0.25	0.25	U
Silver	mg/L	5.0	0.5	0.5	U
Mercury	mg/L	0.2	0.002	0.002	U
General Chemistry					
Flashpoint	Deg F	<140° F	1.00	**>200° F**	
pH	Std Units	2 ≤ pH ≤ 12	0.100	**5.73**	
Corrosivity	Std Units	2 ≤ pH ≤ 12	0.100	**5.73**	
Cyanide, Total	mg/Kg	LF Acceptance	0.63	0.63	U
Sulfide	mg/Kg	LF Acceptance	37	37	U
Percent Solids	%	No Standard	0.1	**82.4**	
Percent Moisture	%	No Standard	0.1	**17.6**	

PIKA INTERNATIONAL, INC.

ATTACHMENT 2
SIGNED WASTE PROFILE
FOR THE PROP CAN AREA INVESTIGATION IDW

12723 Capricorn Drive #500 | Stafford, Texas 77477 | 281-340-5525 tel 281-340-5533 fax
www.pikainc.com

REPUBLIC SERVICES SPECIAL WASTE PROFILE

Requested Disposal Facility: 5076 Carbon Limestone LF OH

Waste Profile #

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

Sales Rep #:

I. Generator Information

Generator Name: Former Ravenna Army Ammunition Plant			
Generator Site Address: 8451 State Route 5			
City: Ravenna	County: Portage	State: Ohio	Zip: 44266
State ID/Reg No: OH5210020	State Approval/Waste Code: (if applicable)		NAICS # :
Generator Mailing Address (if different): ☑ Camp Ravenna Environmental Office, 1438 State Route 534 SW			
City: Newton Falls	County: Trumbull	State: Ohio	Zip: 44444
Generator Contact Name: Kathryn Tait		Email: kathryn.s.tait.nfg@mail.mil	
Phone Number: (614) 336-6136	Ext:	Fax Number:	

II. Billing Information

Bill To: PIKA International, Inc		Contact Name: Richard Callahan	
Billing Address: 12723 Capricorn Dr, Suite 500		Email: rcallahan@pikainc.com	
City: Stafford	State: TX	Zip: 77477	Phone: (281) 340-5525

III. Waste Stream Information

Name of Waste: CC RVAAP-80 Grp 2 Prop Can Tops - Investigation Derived Waste - PIKA	
Process Generating Waste: Soil cuttings, plastic liners, and gloves from Geoprobe Drilling and sampling activities	
Type of Waste:	☐ INDUSTRIAL PROCESS WASTE ☑ POLLUTION CONTROL WASTE
Physical State:	☑ SOLID ☐ SEMI-SOLID ☐ POWDER ☐ LIQUID
Method of Shipment:	☐ BULK ☑ DRUM ☐ BAGGED ☐ OTHER:
Estimated Annual Volume:	2 Drums
Frequency:	☑ ONE TIME ☐ ONGOING
Disposal Consideration:	☑ LANDFILL ☐ SOLIDIFICATION ☐ BIOREMEDIATION

IV. Representative Sample Certification

☐ NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	☑ YES or ☐ NO
Type of Sample: ☑ COMPOSITE SAMPLE ☐ GRAB SAMPLE	
Sample Date: 04/13/2016	
Sample ID Numbers: PCTss-WC001-SO	

Waste Profile #

V. Physical Characteristics of Waste

Characteristic Components	% by Weight (range)
1. Soil	50
2. Plastic sleeves/liners from drilling	49
3. PPE - gloves	1
4.	
5.	

Color	Odor (describe)	Does Waste Contain Free Liquids?	% Solids	pH:	Flash Point
Brown soil	NA	☐ YES or ☑ NO	82.4	5.73	>200 °F

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	☐Yes or ☑No
Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm)[reference 40 CFR 261.23(a)(5)]?	☐Yes or ☑No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	☐Yes or ☑No
Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	☐Yes or ☑No
Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations?	☐Yes or ☑No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31?	☐Yes or ☑No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	☐Yes or ☑No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	☐Yes or ☑No
Is this waste a reactive or heat generating waste?	☐Yes or ☑No
Does the waste contain sulfur or sulfur by-products?	☐Yes or ☑No
Is this waste generated at a Federal Superfund Clean Up Site?	☑Yes or ☐No
Is this waste from a TSD facility, TSD like facility or consolidator?	☐Yes or ☑No

VI. Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

Kathryn S. Tait, Environmental Specialist 2	Ohio Army National Guard
Authorized Representative Name And Title (Type or Print)	Company Name
Kathryn S Tait	4/28/2016
Authorized Representative Signature	Date

PIKA INTERNATIONAL, INC.

ATTACHMENT 3
COMPLETE ANALYTICAL REPORT
FOR THE PROP CAN AREA INVESTIGATION IDW

12723 Capricorn Drive #500 | Stafford, Texas 77477 | 281-340-5525 tel 281-340-5533 fax
www.pikainc.com

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-63443-1
Client Project/Site: Ravenna, OH

For:
PIKA International, Inc.
4935 South Prospect Street
Suite A
Ravenna, Ohio 44266

Attn: Mr. Brian Stockwell

Jill Kellmann

Authorized for release by:
4/22/2016 11:37:32 AM

Jill Kellmann, Manager of Project Management
(916)374-4402
jill.kellmann@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 240-63443-1

Laboratory: TestAmerica Canton

Narrative

Receipt

The sample was received on 4/13/2016 4:20 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.3º C.

Receipt Exceptions

The collection time listed on the COC for sample PCTss-WC001-SO (240-63443-1) was chronologically later than the laboratory receipt time for the sample. The client was contacted, and the lab was instructed to record the collection time of15:20.

GC/MS VOA

Method(s) 8260B: The laboratory control sample (LCS) for preparation batch 240-226135 and analytical batch 240-226198 recovered outside control limits for carbon tetrachloride. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8151A: The continuing calibration verification (CCV) associated with batch 240-226986 recovered above the upper control limit for 2,4-D. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: PCTss-WC001-SO (240-63443-1) and (240-63447-O-1-K).

Method(s) 8081A: The continuing calibration verification (CCV) associated with batch 240-227093 recovered above the upper control limit for Endrin and Heptachlor. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: PCTss-WC001-SO (240-63443-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: PIKA International, Inc.
Project/Site: Ravenna, OH

TestAmerica Job ID: 240-63443-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CAN
8081A	Organochlorine Pesticides (GC)	SW846	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CAN
6010B	Metals (ICP)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL CAN
9012A	Cyanide, Total and/or Amenable	SW846	TAL CAN
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CAN
9045C	pH	SW846	TAL CAN
Moisture	Percent Moisture	EPA	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: PIKA International, Inc.
Project/Site: Ravenna, OH

TestAmerica Job ID: 240-63443-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-63443-1	PCTss-WC001-SO	Solid	04/13/16 15:20	04/13/16 16:20

Detection Summary

Client: PIKA International, Inc.
Project/Site: Ravenna, OH

TestAmerica Job ID: 240-63443-1

Client Sample ID: PCTss-WC001-SO

Lab Sample ID: 240-63443-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0031	J	0.50	0.0029	mg/L	1		6010B	TCLP
Barium	0.32	J B	10	0.0010	mg/L	1		6010B	TCLP
Cadmium	0.0013	J	0.10	0.00014	mg/L	1		6010B	TCLP
Chromium	0.00087	J B	0.50	0.00055	mg/L	1		6010B	TCLP
Lead	0.0027	J	0.50	0.0019	mg/L	1		6010B	TCLP
Flashpoint	>200		1.00	1.00	Degrees F	1		1010	Total/NA
pH	5.73		0.100	0.100	SU	1		9045C	Total/NA
Corrosivity	5.73		0.100	0.100	SU	1		9045C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PCTss-WC001-SO

Date Collected: 04/13/16 15:20
Date Received: 04/13/16 16:20

Lab Sample ID: 240-63443-1

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.025	U	0.025	0.0095	mg/L			04/15/16 23:16	1
1,2-Dichloroethane	0.025	U	0.025	0.011	mg/L			04/15/16 23:16	1
2-Butanone (MEK)	0.25	U	0.25	0.029	mg/L			04/15/16 23:16	1
Benzene	0.025	U	0.025	0.0065	mg/L			04/15/16 23:16	1
Carbon tetrachloride	0.025	U *	0.025	0.0065	mg/L			04/15/16 23:16	1
Chlorobenzene	0.025	U	0.025	0.0075	mg/L			04/15/16 23:16	1
Chloroform	0.025	U	0.025	0.0080	mg/L			04/15/16 23:16	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			04/15/16 23:16	1
Trichloroethene	0.025	U	0.025	0.0085	mg/L			04/15/16 23:16	1
Vinyl chloride	0.025	U	0.025	0.011	mg/L			04/15/16 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 121*		*04/15/16 23:16*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 124*		*04/15/16 23:16*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/15/16 23:16*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 128*		*04/15/16 23:16*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	0.0040	U	0.0040	0.00080	mg/L		04/19/16 12:56	04/21/16 12:54	1
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		04/19/16 12:56	04/21/16 12:54	1
2,4-Dinitrotoluene	0.0040	U	0.0040	0.00025	mg/L		04/19/16 12:56	04/21/16 12:54	1
Hexachlorobenzene	0.00080	U	0.00080	0.000085	mg/L		04/19/16 12:56	04/21/16 12:54	1
Hexachlorobutadiene	0.0040	U	0.0040	0.00027	mg/L		04/19/16 12:56	04/21/16 12:54	1
Hexachloroethane	0.0040	U	0.0040	0.00019	mg/L		04/19/16 12:56	04/21/16 12:54	1
2-Methylphenol	0.0040	U	0.0040	0.00017	mg/L		04/19/16 12:56	04/21/16 12:54	1
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		04/19/16 12:56	04/21/16 12:54	1
Pentachlorophenol	0.016	U	0.016	0.00027	mg/L		04/19/16 12:56	04/21/16 12:54	1
Pyridine	0.0040	U	0.0040	0.00035	mg/L		04/19/16 12:56	04/21/16 12:54	1
2,4,5-Trichlorophenol	0.0040	U	0.0040	0.00030	mg/L		04/19/16 12:56	04/21/16 12:54	1
2,4,6-Trichlorophenol	0.0040	U	0.0040	0.00024	mg/L		04/19/16 12:56	04/21/16 12:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*90*		*30 - 110*	*04/19/16 12:56*	*04/21/16 12:54*	*1*
2-Fluorophenol (Surr)	*74*		*20 - 110*	*04/19/16 12:56*	*04/21/16 12:54*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*23 - 110*	*04/19/16 12:56*	*04/21/16 12:54*	*1*
Nitrobenzene-d5 (Surr)	*98*		*28 - 110*	*04/19/16 12:56*	*04/21/16 12:54*	*1*
Phenol-d5 (Surr)	*64*		*21 - 110*	*04/19/16 12:56*	*04/21/16 12:54*	*1*
Terphenyl-d14 (Surr)	*106*		*48 - 110*	*04/19/16 12:56*	*04/21/16 12:54*	*1*

Method: 8081A - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.00014	mg/L		04/19/16 12:58	04/22/16 10:51	1
Endrin	0.00050	U	0.00050	0.000013	mg/L		04/19/16 12:58	04/22/16 10:51	1
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000013	mg/L		04/19/16 12:58	04/22/16 10:51	1
Heptachlor	0.00050	U	0.00050	0.000014	mg/L		04/19/16 12:58	04/22/16 10:51	1
Heptachlor epoxide	0.00050	U	0.00050	0.000015	mg/L		04/19/16 12:58	04/22/16 10:51	1
Methoxychlor	0.0010	U	0.0010	0.000013	mg/L		04/19/16 12:58	04/22/16 10:51	1
Toxaphene	0.020	U	0.020	0.00020	mg/L		04/19/16 12:58	04/22/16 10:51	1

Client Sample ID: PCTss-WC001-SO

Date Collected: 04/13/16 15:20
Date Received: 04/13/16 16:20

Lab Sample ID: 240-63443-1

Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*10 - 141*	*04/19/16 12:58*	*04/22/16 10:51*	*1*
DCB Decachlorobiphenyl	*70*		*10 - 141*	*04/19/16 12:58*	*04/22/16 10:51*	*1*
Tetrachloro-m-xylene	*66*		*34 - 121*	*04/19/16 12:58*	*04/22/16 10:51*	*1*
Tetrachloro-m-xylene	*69*		*34 - 121*	*04/19/16 12:58*	*04/22/16 10:51*	*1*

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.0040	0.0019	mg/L		04/19/16 13:01	04/22/16 03:43	1
Silvex (2,4,5-TP)	0.0010	U	0.0010	0.00027	mg/L		04/19/16 13:01	04/22/16 03:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*90*		*56 - 120*	*04/19/16 13:01*	*04/22/16 03:43*	*1*
2,4-Dichlorophenylacetic acid	*76*		*56 - 120*	*04/19/16 13:01*	*04/22/16 03:43*	*1*

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0031**	**J**	0.50	0.0029	mg/L		04/19/16 12:16	04/20/16 12:33	1
Barium	**0.32**	**J B**	10	0.0010	mg/L		04/19/16 12:16	04/20/16 12:33	1
Cadmium	**0.0013**	**J**	0.10	0.00014	mg/L		04/19/16 12:16	04/20/16 12:33	1
Chromium	**0.00087**	**J B**	0.50	0.00055	mg/L		04/19/16 12:16	04/20/16 12:33	1
Lead	**0.0027**	**J**	0.50	0.0019	mg/L		04/19/16 12:16	04/20/16 12:33	1
Selenium	0.25	U	0.25	0.0040	mg/L		04/19/16 12:16	04/20/16 12:33	1
Silver	0.50	U	0.50	0.00092	mg/L		04/19/16 12:16	04/20/16 12:33	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.000090	mg/L		04/19/16 12:21	04/20/16 11:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**>200**		1.00	1.00	Degrees F			04/18/16 07:03	1
pH	**5.73**		0.100	0.100	SU			04/14/16 10:25	1
Corrosivity	**5.73**		0.100	0.100	SU			04/14/16 10:25	1
Percent Solids	**82.4**		0.1	0.1	%			04/14/16 09:36	1
Percent Moisture	**17.6**		0.1	0.1	%			04/14/16 09:36	1

Client Sample ID: PCTss-WC001-SO
Date Collected: 04/13/16 15:20
Date Received: 04/13/16 16:20

Lab Sample ID: 240-63443-1
Matrix: Solid
Percent Solids: 82.4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.63	U	0.63	0.38	mg/Kg	☼	04/15/16 15:14	04/15/16 19:53	1
Sulfide	37	U	37	27	mg/Kg	☼	04/18/16 11:06	04/18/16 13:38	1

Surrogate Summary

Client: PIKA International, Inc.
Project/Site: Ravenna, OH

TestAmerica Job ID: 240-63443-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(80-121)	(70-124)	(80-120)	(80-128)
LCS 240-226198/18	Lab Control Sample	102	97	100	105

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(80-121)	(70-124)	(80-120)	(80-128)
240-63443-1	PCTss-WC001-SO	108	95	99	105
LB 240-226135/1-A MB	Method Blank	106	98	103	108

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(30-110)	(20-110)	(23-110)	(28-110)	(21-110)	(48-110)
LCS 240-226581/5-A	Lab Control Sample	92	76	80	101	66	98
MB 240-226581/4-A	Method Blank	88	75	71	91	66	103

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	TBP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(30-110)	(20-110)	(23-110)	(28-110)	(21-110)	(48-110)
240-63443-1	PCTss-WC001-SO	90	74	76	98	64	106
240-63443-1 MS	PCTss-WC001-SO	90	73	82	97	74	100

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(10-141)	(10-141)	(34-121)	(34-121)
LCS 240-226583/5-A	Lab Control Sample	72	73	71	71
MB 240-226583/4-A	Method Blank	65	64	58	59

Surrogate Legend
DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(10-141)	(10-141)	(34-121)	(34-121)
240-63443-1	PCTss-WC001-SO	74	70	66	69
240-63443-1 MS	PCTss-WC001-SO	82	84	66	71

Surrogate Legend
DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1	DCPA2
Lab Sample ID	Client Sample ID	(56-120)	(56-120)
LCS 240-226584/5-A	Lab Control Sample	84	74
MB 240-226584/4-A	Method Blank	78	68

Surrogate Legend
DCPA = 2,4-Dichlorophenylacetic acid

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPA1	DCPA2
Lab Sample ID	Client Sample ID	(56-120)	(56-120)
240-63443-1	PCTss-WC001-SO	90	76

Surrogate Legend
DCPA = 2,4-Dichlorophenylacetic acid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 240-226198/18
Matrix: Solid
Analysis Batch: 226198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.00	1.10		mg/L		110	71 - 133
1,2-Dichloroethane	1.00	1.08		mg/L		108	80 - 120
2-Butanone (MEK)	2.00	1.76		mg/L		88	49 - 120
Benzene	1.00	0.930		mg/L		93	80 - 120
Carbon tetrachloride	1.00	1.23	*	mg/L		123	54 - 122
Chlorobenzene	1.00	0.948		mg/L		95	80 - 120
Chloroform	1.00	1.07		mg/L		107	80 - 123
Tetrachloroethene	1.00	1.03		mg/L		103	79 - 134
Trichloroethene	1.00	1.10		mg/L		110	78 - 130
Vinyl chloride	1.00	0.864		mg/L		86	56 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 121*
4-Bromofluorobenzene (Surr)	*97*		*70 - 124*
Toluene-d8 (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 128*

Lab Sample ID: LB 240-226135/1-A MB
Matrix: Solid
Analysis Batch: 226198

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.025	U	0.025	0.0095	mg/L			04/15/16 22:31	1
1,2-Dichloroethane	0.025	U	0.025	0.011	mg/L			04/15/16 22:31	1
2-Butanone (MEK)	0.25	U	0.25	0.029	mg/L			04/15/16 22:31	1
Benzene	0.025	U	0.025	0.0065	mg/L			04/15/16 22:31	1
Carbon tetrachloride	0.025	U	0.025	0.0065	mg/L			04/15/16 22:31	1
Chlorobenzene	0.025	U	0.025	0.0075	mg/L			04/15/16 22:31	1
Chloroform	0.025	U	0.025	0.0080	mg/L			04/15/16 22:31	1
Tetrachloroethene	0.025	U	0.025	0.015	mg/L			04/15/16 22:31	1
Trichloroethene	0.025	U	0.025	0.0085	mg/L			04/15/16 22:31	1
Vinyl chloride	0.025	U	0.025	0.011	mg/L			04/15/16 22:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 121*		*04/15/16 22:31*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 124*		*04/15/16 22:31*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/15/16 22:31*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 128*		*04/15/16 22:31*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-226581/4-A
Matrix: Solid
Analysis Batch: 226939

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	0.0040	U	0.0040	0.00080	mg/L		04/19/16 12:56	04/21/16 10:55	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-226581/4-A
Matrix: Solid
Analysis Batch: 226939

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226581

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.0040	U	0.0040	0.00034	mg/L		04/19/16 12:56	04/21/16 10:55	1
2,4-Dinitrotoluene	0.0040	U	0.0040	0.00025	mg/L		04/19/16 12:56	04/21/16 10:55	1
Hexachlorobenzene	0.00080	U	0.00080	0.000085	mg/L		04/19/16 12:56	04/21/16 10:55	1
Hexachlorobutadiene	0.0040	U	0.0040	0.00027	mg/L		04/19/16 12:56	04/21/16 10:55	1
Hexachloroethane	0.0040	U	0.0040	0.00019	mg/L		04/19/16 12:56	04/21/16 10:55	1
2-Methylphenol	0.0040	U	0.0040	0.00017	mg/L		04/19/16 12:56	04/21/16 10:55	1
Nitrobenzene	0.0040	U	0.0040	0.000040	mg/L		04/19/16 12:56	04/21/16 10:55	1
Pentachlorophenol	0.016	U	0.016	0.00027	mg/L		04/19/16 12:56	04/21/16 10:55	1
Pyridine	0.0040	U	0.0040	0.00035	mg/L		04/19/16 12:56	04/21/16 10:55	1
2,4,5-Trichlorophenol	0.0040	U	0.0040	0.00030	mg/L		04/19/16 12:56	04/21/16 10:55	1
2,4,6-Trichlorophenol	0.0040	U	0.0040	0.00024	mg/L		04/19/16 12:56	04/21/16 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*30 - 110*	*04/19/16 12:56*	*04/21/16 10:55*	*1*
2-Fluorophenol (Surr)	*75*		*20 - 110*	*04/19/16 12:56*	*04/21/16 10:55*	*1*
2,4,6-Tribromophenol (Surr)	*71*		*23 - 110*	*04/19/16 12:56*	*04/21/16 10:55*	*1*
Nitrobenzene-d5 (Surr)	*91*		*28 - 110*	*04/19/16 12:56*	*04/21/16 10:55*	*1*
Phenol-d5 (Surr)	*66*		*21 - 110*	*04/19/16 12:56*	*04/21/16 10:55*	*1*
Terphenyl-d14 (Surr)	*103*		*48 - 110*	*04/19/16 12:56*	*04/21/16 10:55*	*1*

Lab Sample ID: LCS 240-226581/5-A
Matrix: Solid
Analysis Batch: 226939

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226581

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3 & 4 Methylphenol	0.0800	0.0689		mg/L		86	48 - 110
1,4-Dichlorobenzene	0.0800	0.0633		mg/L		79	52 - 110
2,4-Dinitrotoluene	0.0800	0.0861		mg/L		108	54 - 110
Hexachlorobenzene	0.0800	0.0686		mg/L		86	50 - 110
Hexachlorobutadiene	0.0800	0.0642		mg/L		80	34 - 110
Hexachloroethane	0.0800	0.0711		mg/L		89	41 - 110
2-Methylphenol	0.0800	0.0756		mg/L		95	44 - 111
Nitrobenzene	0.0800	0.0865		mg/L		108	40 - 110
Pentachlorophenol	0.160	0.132		mg/L		82	12 - 110
Pyridine	0.0800	0.0594		mg/L		74	30 - 110
2,4,5-Trichlorophenol	0.0800	0.0726		mg/L		91	51 - 110
2,4,6-Trichlorophenol	0.0800	0.0734		mg/L		92	46 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*92*		*30 - 110*
2-Fluorophenol (Surr)	*76*		*20 - 110*
2,4,6-Tribromophenol (Surr)	*80*		*23 - 110*
Nitrobenzene-d5 (Surr)	*101*		*28 - 110*
Phenol-d5 (Surr)	*66*		*21 - 110*
Terphenyl-d14 (Surr)	*98*		*48 - 110*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-63443-1 MS
Matrix: Solid
Analysis Batch: 226939

Client Sample ID: PCTss-WC001-SO
Prep Type: TCLP
Prep Batch: 226581

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
3 & 4 Methylphenol	0.0040	U	0.0800	0.0676		mg/L		84	29 - 110
1,4-Dichlorobenzene	0.0040	U	0.0800	0.0640		mg/L		80	31 - 110
2,4-Dinitrotoluene	0.0040	U	0.0800	0.0865		mg/L		108	42 - 110
Hexachlorobenzene	0.00080	U	0.0800	0.0653		mg/L		82	42 - 110
Hexachlorobutadiene	0.0040	U	0.0800	0.0641		mg/L		80	28 - 110
Hexachloroethane	0.0040	U	0.0800	0.0694		mg/L		87	26 - 110
2-Methylphenol	0.0040	U	0.0800	0.0691		mg/L		86	33 - 112
Nitrobenzene	0.0040	U	0.0800	0.0856		mg/L		107	32 - 110
Pentachlorophenol	0.016	U	0.160	0.124		mg/L		78	10 - 124
Pyridine	0.0040	U	0.0800	0.0567		mg/L		71	21 - 110
2,4,5-Trichlorophenol	0.0040	U	0.0800	0.0658		mg/L		82	41 - 110
2,4,6-Trichlorophenol	0.0040	U	0.0800	0.0707		mg/L		88	35 - 110

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*90*		*30 - 110*
2-Fluorophenol (Surr)	*73*		*20 - 110*
2,4,6-Tribromophenol (Surr)	*82*		*23 - 110*
Nitrobenzene-d5 (Surr)	*97*		*28 - 110*
Phenol-d5 (Surr)	*74*		*21 - 110*
Terphenyl-d14 (Surr)	*100*		*48 - 110*

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 240-226583/4-A
Matrix: Solid
Analysis Batch: 227093

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226583

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.0050	U	0.0050	0.00014	mg/L		04/19/16 12:58	04/22/16 10:05	1
Endrin	0.00050	U	0.00050	0.000013	mg/L		04/19/16 12:58	04/22/16 10:05	1
gamma-BHC (Lindane)	0.00050	U	0.00050	0.000013	mg/L		04/19/16 12:58	04/22/16 10:05	1
Heptachlor	0.00050	U	0.00050	0.000014	mg/L		04/19/16 12:58	04/22/16 10:05	1
Heptachlor epoxide	0.00050	U	0.00050	0.000015	mg/L		04/19/16 12:58	04/22/16 10:05	1
Methoxychlor	0.0010	U	0.0010	0.000013	mg/L		04/19/16 12:58	04/22/16 10:05	1
Toxaphene	0.020	U	0.020	0.00020	mg/L		04/19/16 12:58	04/22/16 10:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*10 - 141*	*04/19/16 12:58*	*04/22/16 10:05*	*1*
DCB Decachlorobiphenyl	*64*		*10 - 141*	*04/19/16 12:58*	*04/22/16 10:05*	*1*
Tetrachloro-m-xylene	*58*		*34 - 121*	*04/19/16 12:58*	*04/22/16 10:05*	*1*
Tetrachloro-m-xylene	*59*		*34 - 121*	*04/19/16 12:58*	*04/22/16 10:05*	*1*

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 240-226583/5-A
Matrix: Solid
Analysis Batch: 227093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226583

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.000400	0.000320	J	mg/L		80	49 - 150
gamma-BHC (Lindane)	0.000400	0.000309	J	mg/L		77	22 - 144
Heptachlor	0.000400	0.000323	J	mg/L		81	40 - 129
Heptachlor epoxide	0.000400	0.000330	J	mg/L		83	42 - 137
Methoxychlor	0.000800	0.000606	J	mg/L		76	35 - 147

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*72*		*10 - 141*
DCB Decachlorobiphenyl	*73*		*10 - 141*
Tetrachloro-m-xylene	*71*		*34 - 121*
Tetrachloro-m-xylene	*71*		*34 - 121*

Lab Sample ID: 240-63443-1 MS
Matrix: Solid
Analysis Batch: 227093

Client Sample ID: PCTss-WC001-SO
Prep Type: TCLP
Prep Batch: 226583

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin	0.00050	U	0.000400	0.000309	J	mg/L		77	43 - 138
gamma-BHC (Lindane)	0.00050	U	0.000400	0.000305	J	mg/L		76	32 - 120
Heptachlor	0.00050	U	0.000400	0.000337	J	mg/L		84	42 - 120
Heptachlor epoxide	0.00050	U	0.000400	0.000330	J	mg/L		82	48 - 120
Methoxychlor	0.0010	U	0.000800	0.000652	J	mg/L		82	45 - 127

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*82*		*10 - 141*
DCB Decachlorobiphenyl	*84*		*10 - 141*
Tetrachloro-m-xylene	*66*		*34 - 121*
Tetrachloro-m-xylene	*71*		*34 - 121*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 240-226584/4-A
Matrix: Solid
Analysis Batch: 226986

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226584

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.0040	U	0.0040	0.0019	mg/L		04/19/16 13:01	04/22/16 02:52	1
Silvex (2,4,5-TP)	0.0010	U	0.0010	0.00027	mg/L		04/19/16 13:01	04/22/16 02:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*78*		*56 - 120*	*04/19/16 13:01*	*04/22/16 02:52*	*1*
2,4-Dichlorophenylacetic acid	*68*		*56 - 120*	*04/19/16 13:01*	*04/22/16 02:52*	*1*

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 240-226584/5-A
Matrix: Solid
Analysis Batch: 226986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226584

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	0.0200	0.0152		mg/L		76	50 - 120
Silvex (2,4,5-TP)	0.00500	0.00398		mg/L		80	45 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*84*		*56 - 120*
2,4-Dichlorophenylacetic acid	*74*		*56 - 120*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-226553/2-A
Matrix: Solid
Analysis Batch: 226739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226553

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	U	0.50	0.0029	mg/L		04/19/16 12:16	04/20/16 11:47	1
Barium	0.00239	J	10	0.0010	mg/L		04/19/16 12:16	04/20/16 11:47	1
Cadmium	0.10	U	0.10	0.00014	mg/L		04/19/16 12:16	04/20/16 11:47	1
Chromium	0.50	U	0.50	0.00055	mg/L		04/19/16 12:16	04/20/16 11:47	1
Lead	0.50	U	0.50	0.0019	mg/L		04/19/16 12:16	04/20/16 11:47	1
Selenium	0.25	U	0.25	0.0040	mg/L		04/19/16 12:16	04/20/16 11:47	1
Silver	0.50	U	0.50	0.00092	mg/L		04/19/16 12:16	04/20/16 11:47	1

Lab Sample ID: LCS 240-226553/3-A
Matrix: Solid
Analysis Batch: 226739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226553

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	2.11		mg/L		106	50 - 150
Barium	2.00	1.96	J	mg/L		98	50 - 150
Cadmium	0.0500	0.0510	J	mg/L		102	50 - 150
Chromium	0.200	0.201	J	mg/L		101	50 - 150
Lead	0.500	0.453	J	mg/L		91	50 - 150
Selenium	2.00	2.20		mg/L		110	50 - 150
Silver	0.0500	0.0536	J	mg/L		107	50 - 150

Lab Sample ID: LB 240-226432/1-B
Matrix: Solid
Analysis Batch: 226739

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 226553

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	U	0.50	0.0029	mg/L		04/19/16 12:16	04/20/16 11:43	1
Barium	0.0218	J	10	0.0010	mg/L		04/19/16 12:16	04/20/16 11:43	1
Cadmium	0.10	U	0.10	0.00014	mg/L		04/19/16 12:16	04/20/16 11:43	1
Chromium	0.00112	J	0.50	0.00055	mg/L		04/19/16 12:16	04/20/16 11:43	1
Lead	0.50	U	0.50	0.0019	mg/L		04/19/16 12:16	04/20/16 11:43	1
Selenium	0.25	U	0.25	0.0040	mg/L		04/19/16 12:16	04/20/16 11:43	1
Silver	0.50	U	0.50	0.00092	mg/L		04/19/16 12:16	04/20/16 11:43	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-226557/2-A
Matrix: Solid
Analysis Batch: 226851

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226557

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.000090	mg/L		04/19/16 12:21	04/20/16 11:25	1

Lab Sample ID: LCS 240-226557/3-A
Matrix: Solid
Analysis Batch: 226851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226557

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00522		mg/L		104	80 - 120

Lab Sample ID: LB 240-226432/1-C
Matrix: Solid
Analysis Batch: 226851

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 226557

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	U	0.0020	0.000090	mg/L		04/19/16 12:21	04/20/16 11:32	1

Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 240-226381/1
Matrix: Solid
Analysis Batch: 226381

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	81.00		Degrees F		100	97 - 103

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-226196/1-A
Matrix: Solid
Analysis Batch: 226212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226196

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.51	U	0.51	0.31	mg/Kg		04/15/16 15:14	04/15/16 19:47	1

Lab Sample ID: MB 240-226196/1-A
Matrix: Solid
Analysis Batch: 226212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226196

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.51	U	0.51	0.31	mg/Kg		04/15/16 15:14	04/15/16 21:27	1

Lab Sample ID: LCS 240-226196/2-A
Matrix: Solid
Analysis Batch: 226212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226196

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	3.92	4.07		mg/Kg		104	68 - 123

Method: 9012A - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: LCS 240-226196/2-A
Matrix: Solid
Analysis Batch: 226212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226196

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	3.92	4.14		mg/Kg		105	68 - 123

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-226301/8-A
Matrix: Solid
Analysis Batch: 226349

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 226301

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	30	U	30	22	mg/Kg		04/18/16 08:07	04/18/16 12:02	1

Lab Sample ID: LCS 240-226301/9-A
Matrix: Solid
Analysis Batch: 226349

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 226301

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	92.6	81.8		mg/Kg		88	70 - 130

Method: 9045C - pH

Lab Sample ID: LCS 240-225948/2
Matrix: Solid
Analysis Batch: 225948

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	6.15	6.210		SU		101	97 - 103
Corrosivity	6.15	6.210		SU		101	97 - 103

Lab Sample ID: LCS 240-225948/21
Matrix: Solid
Analysis Batch: 225948

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	6.15	6.210		SU		101	97 - 103
Corrosivity	6.15	6.210		SU		101	97 - 103

Lab Sample ID: 240-63443-1 DU
Matrix: Solid
Analysis Batch: 225948

Client Sample ID: PCTss-WC001-SO
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	5.73		5.780		SU		0.9	20
Corrosivity	5.73		5.780		SU		0.9	20

GC/MS VOA

Leach Batch: 226135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	1311	
LB 240-226135/1-A MB	Method Blank	TCLP	Solid	1311	

Analysis Batch: 226198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	8260B	226135
LB 240-226135/1-A MB	Method Blank	TCLP	Solid	8260B	226135
LCS 240-226198/18	Lab Control Sample	Total/NA	Solid	8260B	

GC/MS Semi VOA

Leach Batch: 226432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	1311	
240-63443-1 MS	PCTss-WC001-SO	TCLP	Solid	1311	

Prep Batch: 226581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	3510C	226432
240-63443-1 MS	PCTss-WC001-SO	TCLP	Solid	3510C	226432
LCS 240-226581/5-A	Lab Control Sample	Total/NA	Solid	3510C	
MB 240-226581/4-A	Method Blank	Total/NA	Solid	3510C	

Analysis Batch: 226939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	8270C	226581
240-63443-1 MS	PCTss-WC001-SO	TCLP	Solid	8270C	226581
LCS 240-226581/5-A	Lab Control Sample	Total/NA	Solid	8270C	226581
MB 240-226581/4-A	Method Blank	Total/NA	Solid	8270C	226581

GC Semi VOA

Leach Batch: 226432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	1311	
240-63443-1 MS	PCTss-WC001-SO	TCLP	Solid	1311	

Prep Batch: 226583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	3520C	226432
240-63443-1 MS	PCTss-WC001-SO	TCLP	Solid	3520C	226432
LCS 240-226583/5-A	Lab Control Sample	Total/NA	Solid	3520C	
MB 240-226583/4-A	Method Blank	Total/NA	Solid	3520C	

Prep Batch: 226584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	8151A	226432
LCS 240-226584/5-A	Lab Control Sample	Total/NA	Solid	8151A	
MB 240-226584/4-A	Method Blank	Total/NA	Solid	8151A	

GC Semi VOA (Continued)

Analysis Batch: 226986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	8151A	226584
LCS 240-226584/5-A	Lab Control Sample	Total/NA	Solid	8151A	226584
MB 240-226584/4-A	Method Blank	Total/NA	Solid	8151A	226584

Analysis Batch: 227093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	8081A	226583
240-63443-1 MS	PCTss-WC001-SO	TCLP	Solid	8081A	226583
LCS 240-226583/5-A	Lab Control Sample	Total/NA	Solid	8081A	226583
MB 240-226583/4-A	Method Blank	Total/NA	Solid	8081A	226583

Metals

Leach Batch: 226432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	1311	
LB 240-226432/1-B	Method Blank	TCLP	Solid	1311	
LB 240-226432/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 226553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	3010A	226432
LB 240-226432/1-B	Method Blank	TCLP	Solid	3010A	226432
LCS 240-226553/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 240-226553/2-A	Method Blank	Total/NA	Solid	3010A	

Prep Batch: 226557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	7470A	226432
LB 240-226432/1-C	Method Blank	TCLP	Solid	7470A	226432
LCS 240-226557/3-A	Lab Control Sample	Total/NA	Solid	7470A	
MB 240-226557/2-A	Method Blank	Total/NA	Solid	7470A	

Analysis Batch: 226739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	6010B	226553
LB 240-226432/1-B	Method Blank	TCLP	Solid	6010B	226553
LCS 240-226553/3-A	Lab Control Sample	Total/NA	Solid	6010B	226553
MB 240-226553/2-A	Method Blank	Total/NA	Solid	6010B	226553

Analysis Batch: 226851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	TCLP	Solid	7470A	226557
LB 240-226432/1-C	Method Blank	TCLP	Solid	7470A	226557
LCS 240-226557/3-A	Lab Control Sample	Total/NA	Solid	7470A	226557
MB 240-226557/2-A	Method Blank	Total/NA	Solid	7470A	226557

General Chemistry

Analysis Batch: 225948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	9045C	
240-63443-1 DU	PCTss-WC001-SO	Total/NA	Solid	9045C	
LCS 240-225948/2	Lab Control Sample	Total/NA	Solid	9045C	
LCS 240-225948/21	Lab Control Sample	Total/NA	Solid	9045C	

Analysis Batch: 225951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	Moisture	

Prep Batch: 226196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	9012A	
LCS 240-226196/2-A	Lab Control Sample	Total/NA	Solid	9012A	
MB 240-226196/1-A	Method Blank	Total/NA	Solid	9012A	

Analysis Batch: 226212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	9012A	226196
LCS 240-226196/2-A	Lab Control Sample	Total/NA	Solid	9012A	226196
LCS 240-226196/2-A	Lab Control Sample	Total/NA	Solid	9012A	226196
MB 240-226196/1-A	Method Blank	Total/NA	Solid	9012A	226196
MB 240-226196/1-A	Method Blank	Total/NA	Solid	9012A	226196

Prep Batch: 226301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	9030B	
LCS 240-226301/9-A	Lab Control Sample	Total/NA	Solid	9030B	
MB 240-226301/8-A	Method Blank	Total/NA	Solid	9030B	

Analysis Batch: 226349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	9034	226301
LCS 240-226301/9-A	Lab Control Sample	Total/NA	Solid	9034	226301
MB 240-226301/8-A	Method Blank	Total/NA	Solid	9034	226301

Analysis Batch: 226381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-63443-1	PCTss-WC001-SO	Total/NA	Solid	1010	
LCS 240-226381/1	Lab Control Sample	Total/NA	Solid	1010	

Lab Chronicle

Client: PIKA International, Inc.
Project/Site: Ravenna, OH

TestAmerica Job ID: 240-63443-1

Client Sample ID: PCTss-WC001-SO

Lab Sample ID: 240-63443-1

Date Collected: 04/13/16 15:20

Matrix: Solid

Date Received: 04/13/16 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			226135	04/14/16 19:10	DRJ	TAL CAN
TCLP	Analysis	8260B		1	226198	04/15/16 23:16	TJL1	TAL CAN
TCLP	Leach	1311			226432	04/18/16 17:50	DRJ	TAL CAN
TCLP	Prep	3510C			226581	04/19/16 12:56	CS	TAL CAN
TCLP	Analysis	8270C		1	226939	04/21/16 12:54	JMG	TAL CAN
TCLP	Leach	1311			226432	04/18/16 17:50	DRJ	TAL CAN
TCLP	Prep	3520C			226583	04/19/16 12:58	JDR	TAL CAN
TCLP	Analysis	8081A		1	227093	04/22/16 10:51	BPM	TAL CAN
TCLP	Leach	1311			226432	04/18/16 17:50	DRJ	TAL CAN
TCLP	Prep	8151A			226584	04/19/16 13:01	SDE	TAL CAN
TCLP	Analysis	8151A		1	226986	04/22/16 03:43	DEB	TAL CAN
TCLP	Leach	1311			226432	04/18/16 17:50	DRJ	TAL CAN
TCLP	Prep	3010A			226553	04/19/16 12:16	WKD	TAL CAN
TCLP	Analysis	6010B		1	226739	04/20/16 12:33	KLC	TAL CAN
TCLP	Leach	1311			226432	04/18/16 17:50	DRJ	TAL CAN
TCLP	Prep	7470A			226557	04/19/16 12:21	WKD	TAL CAN
TCLP	Analysis	7470A		1	226851	04/20/16 11:43	DSH	TAL CAN
Total/NA	Analysis	1010		1	226381	04/18/16 07:03	TPH	TAL CAN
Total/NA	Analysis	9045C		1	225948	04/14/16 10:25	DTN	TAL CAN
Total/NA	Analysis	Moisture		1	225951	04/14/16 09:36	LCN	TAL CAN

Client Sample ID: PCTss-WC001-SO

Lab Sample ID: 240-63443-1

Date Collected: 04/13/16 15:20

Matrix: Solid

Date Received: 04/13/16 16:20

Percent Solids: 82.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012A			226196	04/15/16 15:14	JWW	TAL CAN
Total/NA	Analysis	9012A		1	226212	04/15/16 19:53	JWW	TAL CAN
Total/NA	Prep	9030B			226301	04/18/16 11:06	BLW	TAL CAN
Total/NA	Analysis	9034		1	226349	04/18/16 13:38	BLW	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: PIKA International, Inc.
Project/Site: Ravenna, OH

TestAmerica Job ID: 240-63443-1

Laboratory: TestAmerica Canton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

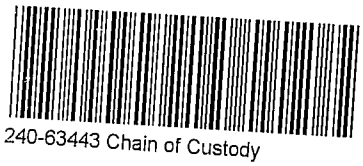
Authority	Program	EPA Region	Certification ID	Expiration Date
Ohio VAP	State Program	5	CL0024	09-14-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
1010		Solid	Flashpoint
7470A	7470A	Solid	Mercury
8081A	3520C	Solid	Chlordane (technical)
9034	9030B	Solid	Sulfide
9045C		Solid	Corrosivity
9045C		Solid	pH
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

TestAmerica Laboratories, Inc.

CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



4101 Shuffel Street, N.W., North Canton, OH 44720 tel 330.497.9396 fax 330.497.0772 www.testamericainc.com

0.8/<0.3

TestAmerica - Sacramento

Page 1 of 1

Report To:

Contact:	Richard Callahan
Company:	PIKA
Address:	3975 Walnutwood Way
	Uniontown, OH 44685
Phone:	330-352-4822
Fax:	NA
Email:	rcallahan@pikainc.com

Bill To:

Contact:	Same as Report To
Company:	
Address:	
Phone:	
Fax:	
PO #:	1208157-009
Quote #:	32007742

Lab Lot #

TestAmerica - Sacramento
880 Riveride Parkway
West Sacramento, CA
916-374-4402
Fax. 916-372-1059
Jill Kellmann

Sampler Name: R. Callahan

Sampler Signature: Richard C. Callahan

Lab PM: **Jill Kellmann**

Date Required		Refrg.#	
Hard Copy	21 Days	# / Cont.	
Fax/Email	14 Days	Volume	
		Preserv.	

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Composite	TCLP VOC	TCLP SVOC	TCLP Pesticides	TCLP Herbocides	Ignitability	Corrosive	Cyanide	Sulfide		No. of Containers
		PCTss-WC001-SO	4/13/2016	1630	SO	X	X	X	X	X	X	X	X	X		3

Package Sealed: Yes No — Samples Sealed: Yes No

Received on Ice: Yes No — Samples Intact: Yes No

Temperature C or Cooler:

Within Hold Time: Yes No

Preserv. Indicated: Yes No N/A

pH Check OK: Yes No N/A

Res Cl2 Check OK: Yes No N/A

Sample Labels and COC Agree: Yes No COC not present

Relinquished by:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:
Richard C. Callahan	PIKA	4/13/16	1620	Terry Burnett	TA Cam	4/13/16	1620
Relinquished by:	Company:	Date:	Time:	Received By:	Company:	Date:	Time:

Matrix Key

W - Water	WW - Wastewater	DL - Drum Liquid	A Air
S - Soil	SE - Sediment	DS - Drum Solid	OL - Oil
SL - Sludge	L - Leachate	W - Wipe	O _____
SO - Solid	M - Miscellaneous		

Comments:

Date Received

Courier:

Hand Delivered:

Bill of Lading:

TestAmerica Canton Sample Receipt Form/Narrative Login # 103443
Canton Facility

Client PLKA Site Name

Cooler unpacked by: Amy Burns

Cooler Received on 4/13/16 Opened on 4/13/16

FedEx: 1st Grd Exp UPS FAS Stetson (Client Drop Off) TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box (Client Cooler) Box Other

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   - IR GUN# 48 (CF -1.9 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   - IR GUN# 36 (CF -1.5 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   - IR GUN# I8 (CF -0.5 °C) Observed Cooler Temp. 0.8 °C Corrected Cooler Temp. 0.3 °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity Yes (No)
   - Were custody seals on the outside of the cooler(s) signed & dated? Yes No (NA)
   - Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
3. Shippers' packing slip attached to the cooler(s)? Yes (No)
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. ~~Sufficient quantity received to perform indicated analyses?~~ (Yes) No
11. Are these work share samples? Yes (No)

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# HC559158
13. Were VOAs on the COC? Yes (No)
14. Were air bubbles >6 mm in any VOA vials? Yes No (NA)
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes (No)
16. Was a LL Hg or Me Hg trip blank present? Yes (No)

Contacted PM Date by via Verbal Voice Mail Other

Concerning

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

Sample time = 1630 after sample was received - will log 1630 for sample time

18. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.

Sample(s) were received in a broken container.

Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.

Time preserved: Preservative(s) added/Lot number(s):

CAMP RAVENNA WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

CONTRACTOR: PIKA **Month:** April **Year:** 2016 **Waste Description:** Solids / Soils

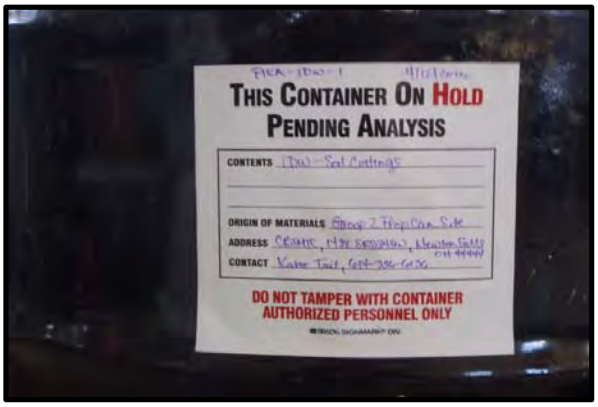
Container Nos.: PIKA-IDW-1, PIKA-IDW-2

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: **Time:**	**Date:** **Time:**	**Date: 4-20-16** **Time: 1443**	**Date:** **Time:**
Point of Contact (Name/Number)			Rick Callahan 330-352-4822	
Project Name			Prop Can Area Investigation	
Contracting Agency and POC			USACE -Louisville Jay Trumble (502) 315-6349	
Waste Determination: Pending Analysis, Hazardous, Non-Hazardous			Pending Analysis	
*Location on Installation			Bldg 1036	
Date Generated			4/13/2016	
Projected Date of Disposal			5/13/2016	
Non-Haz, Satellite, 90-Day Storage Area			Non-Haz	
Waste Generation Site			Prop Can Area	
Number of Containers (size/type)			2 (55 gal open top)	
Condition of Container(s)			Excellent	
Containers closed, no loose lids, no loose bungs	yes / no	yes / no	(yes) / no	yes / no
Waste labeled properly and visible (40CFR 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 Spillls?	yes / no	yes / no	yes / (no)	yes / no
Spill Kit Available?	yes / no	yes / no	(yes) / no	yes / no
Fire extinguisher Avaialble and Charged	yes / no	yes / no	(yes) / no	yes / no
Containers gounded 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			Richard Callahan	
Signature			Richard C. Callahan	

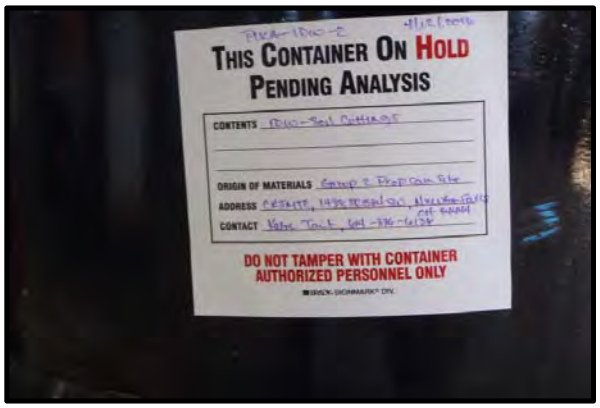
Photo Documentation
4-20-16 Inspection

Palleted IDW Drums in Bldg. 1036

Palleted IDW Drums Condition



PIKA-IDW-1 Drum Label



PIKA-IDW-2 Drum Label

CAMP RAVENNA WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

CONTRACTOR: PIKA **Month:** April **Year:** 2016 **Waste Description:** Solids / Soils

Container Nos.: PIKA-IDW-1, PIKA-IDW-2

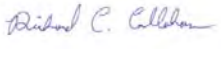
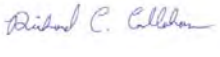
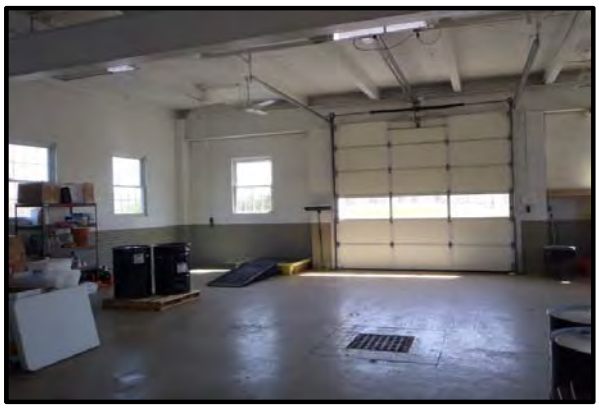
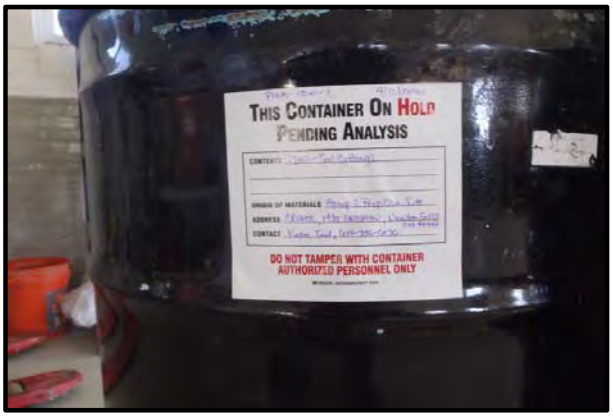
	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: **Time:**	**Date:** **Time:**	**Date: 4-20-16** **Time: 1443**	**Date: 4-27-16** **Time: 1450**
Point of Contact (Name/Number)			Rick Callahan 330-352-4822	Rick Callahan 330-352-4822
Project Name			Prop Can Area Investigation	Prop Can Area Investigation
Contracting Agency and POC			USACE -Louisville Jay Trumble (502) 315-6349	USACE -Louisville Jay Trumble (502) 315-6349
Waste Determination: Pending Analysis, Hazardous, Non-Hazardous			Pending Analysis	Pending Analysis
*Location on Installation			Bldg 1036	Bldg 1036
Date Generated			4/13/2016	4/13/2016
Projected Date of Disposal			5/13/2016	5/13/2016
Non-Haz, Satellite, 90-Day Storage Area			Non-Haz	Non-Haz
Waste Generation Site			Prop Can Area	Prop Can Area
Number of Containers (size/type)			2 (55 gal open top)	2 (55 gal open top)
Condition of Container(s)			Excellent	Excellent
Containers closed, no loose lids, no loose bungs	yes / no	yes / no	(yes) / no	(yes) / no
Waste labeled properly and visible (40CFR 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 Spillls?	yes / no	yes / no	yes / (no)	yes / (no)
Spill Kit Available?	yes / no	yes / no	(yes) / no	(yes) / no
Fire extinguisher Avaialble and Charged	yes / no	yes / no	(yes) / no	(yes) / no
Containers gounded 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			Richard Callahan	Richard Callahan
Signature				

Photo Documentation
4-27-16 Inspection

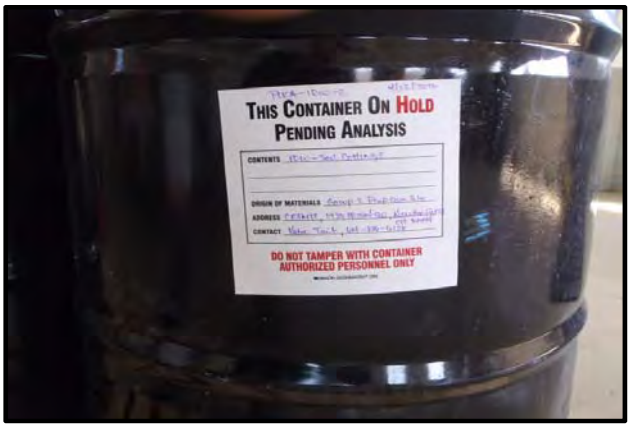


Palleted IDW Drums in Bldg. 1036

Palleted IDW Drums Condition



PIKA-IDW-1 Drum Label



PIKA-IDW-2 Drum Label

CAMP RAVENNA WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

CONTRACTOR: PIKA **Month:** May **Year:** 2016 **Waste Description:** Solids / Soils

Container Nos.: PIKA-IDW-1, PIKA-IDW-2

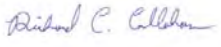
	WEEK 1	WEEK 2	WEEK 3	WEEK 4
	Date: 5-9-16 **Time:** 0930	**Date:** **Time:**	**Date:** **Time:**	**Date:** **Time:**
Point of Contact (Name/Number)	Rick Callahan 330-352-4822			
Project Name	Prop Can Area Investigation			
Contracting Agency and POC	USACE -Louisville Jay Trumble (502) 315-6349			
Waste Determination: Pending Analysis, Hazardous, Non-Hazardous	Non-Hazardous			
*Location on Installation	Bldg 1036			
Date Generated	4/13/16			
Projected Date of Disposal	5/9/16			
Non-Haz, Satellite, 90-Day Storage Area	Non-Haz			
Waste Generation Site	Prop Can Area			
Number of Containers (size/type)	2 (55 gal open top)			
Condition of Container(s)	Excellent			
Containers closed, no loose lids, no loose bungs	yes / no	yes / no	yes / no	yes / no
Waste labeled properly and visible (40CFR 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 Spillls?	yes / no	yes / no	yes / no	yes / no
Spill Kit Available?	yes / no	yes / no	yes / no	yes / no
Fire extinguisher Avaialble and Charged	yes / no	yes / no	yes / no	yes / no
Containers gounded 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
Manifest Signed by Camp Ravenna Environmental Office; Kathryn Tait				
Printed Name	Richard Callahan			
Signature				

Photo Documentation
5-9-16 Drum Pickup

Palleted IDW Drums in Bldg. 1036

Wolfords - Trucking,Transporting for Republic Services

Loading Drums

Drums Secured for Transport and Disposal

REPUBLIC SERVICES, INC.

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

I. GENERATOR (Generator completes Ia-r)

a. Generator's US EPA ID Number	b. Manifest Document Number	c. Page 1 of
NA	167002-02	1

d. Generator's Name and Location:	e. Generator's Mailing Address:
Former Ravenna Army Ammunition Plant 8451 State Route 5 Ravenna Ohio 44266 f. Phone:614-336-6136	Camp Ravenna Environmental Office 1438 State Route 534 SW Newton Falls OH 44444 g. Phone:614-366-6136
If owner of the generating facility differs from the generator, provide: h. Owner's Name: NA	i. Owner's Phone No.: NA

j. Waste Profile #	k. Exp. Date	l. Waste Shipping Name and Description	m. Containers No.	m. Containers Type	n. Total Quantity	o. Unit Wt/Vol
5076 16 7002	04/28/2017	INVESTIGATION DERIVED WASTE (DIRECT BURIAL)	02	DR	~ 02	DR

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.

p. Generator Authorized Agent Name (Print)	q. Signature	r. Date
Kathryn S. Tait	Kathryn S Tait	9 May 2016

II. TRANSPORTER (Generator completes IIa-b and Transporter completes IIc-e)

a. Transporter's Name and Address:
Wolfords
175 Ohio Avenue
McDonald OH 44437
b. Phone: 330-530-3200

c. Driver Name (Print)	d. Signature	e. Date
Lewis Skrucki		05/09/16

III. DESTINATION (Generator complete IIIa-c and Destination Site completes IIId-g)

a. Disposal Facility and Site Address:	c. US EPA Number	d. Discrepancy Indication Space:
CARBON LIMESTONE LANDFILL 8100 SOUTH STATELINE ROAD LOWELLVILLE, OH 44436 b. Phone: 330-536-8013	OHD987048212	

I herby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

e. Name of Authorized Agent (Print)	f. Signature	g. Date
Sheryl Hovanec		5-10-16

IV. ASBESTOS (Generator completes IVa-f and Operator complete IVg-i)

a. Operator's Name and Address:	c. Responsible Agency Name and Address:
NA b. Phone:	NA d. Phone:

e. Special Handling Instructions and Additional Information:

f. ☐ Friable ☐ Non-Friable ☐ Both % Friable % Non-Friable

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

g. Operator's Name and Title (Print)	h. Signature	i. Date

*Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation or both

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60033	566112.4	2367985	4+68.0	601.5	3/29/2016	1 Prop Can Lid
60034	566111.7	2367974	4+57.1	602	3/29/2016	5 Prop can lids
60035	566102.4	2367952	4+34.6	611	3/29/2016	1 Prop Can Lid
60036	566075.1	2367970	4+52.4	638.6	3/29/2016	1 Prop Can
60037	566081.3	2368007	4+90.2	633	3/29/2016	1 Prop Can Lid, 8 Prop Cans
60038	566067	2368017	4+99.9	647.4	3/29/2016	Prop Cans and Lids
60039	566051.2	2368007	4+88.8	663	3/29/2016	Prop Can and Lid
60040	566046.5	2367995	4+77.7	667.6	3/29/2016	Prop Can and Lid
60041	566049.4	2367989	4+71.4	664.6	3/29/2016	Prop Can and Lid
60042	566056.5	2367995	4+77.1	657.6	3/29/2016	Prop Can and Lid
60043	566060.5	2367991	4+73.0	653.5	3/29/2016	Prop Can and Lid
60044	566056.7	2367987	4+69.8	657.3	3/29/2016	Prop Can and Lid
60045	566027	2368011	4+92.4	687.3	3/29/2016	T Post
60046	566029.1	2368069	5+50.7	686.1	3/29/2016	Prop Can Lid
60047	566019.2	2368073	5+54.4	696	3/29/2016	Prop Can
60048	565997	2368100	5+81.9	718.7	3/29/2016	Prop Can
60056	566505.7	2367899	3+88.6	207	3/28/2016	Metal Scrap 3"x2"x1.5", Metal Scrap 2"x2"x1", 1Railroad Spike, 1 Propellant Canister Lid
60057	566501.1	2367924	4+13.2	212	3/28/2016	Propellant Canister Lids x 12
60058	566497.5	2367928	4+16.9	215.6	3/28/2016	Propellant Canister Lids x 11
60059	566507.5	2367973	4+62.7	206.3	3/28/2016	Propellant Canister Lid x 1
60088	566133.8	2367936	4+19.5	579.4	3/29/2016	Prop Can Tube
60089	566155.1	2367911	3+94.7	557.7	3/29/2016	Prop Can and Lid
60090	566169.1	2367904	3+88.1	543.6	3/29/2016	20 prop Cans and Lids
60091	566177.8	2367935	4+18.7	535.4	3/29/2016	2 Prop Can Tubes
60093	566282.5	2367949	4+34.5	430.9	3/30/2016	3 Prop can lids and 2 tubes
60094	566291.9	2367940	4+26.2	421.4	3/29/2016	Propellant Canister Lids x 38
60095	566294.9	2367939	4+24.8	418.3	3/29/2016	Propellant Canister Lids x 2, Metal scrap 1.5"x 1.5"x 1"
60096	566291.5	2367948	4+33.8	421.9	3/29/2016	Propellant Canister Lids x 5
60097	566295.7	2367957	4+42.5	417.9	3/29/2016	Propellant Canister Lids x 3
60098	566294.4	2367961	4+46.7	419.2	3/29/2016	Propellant Canister Lids x 2
60099	566303.3	2367953	4+39.4	410.2	3/29/2016	Propellant Canister Lids x 6, 1 Canister Body

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60100	566311.1	2367955	4+40.9	402.4	3/29/2016	Propellant Canister Lid x 1, 1 Canister Body, 4 Ring pieces
60101	566310.5	2367944	4+30.0	402.8	3/29/2016	Propellant Canister Lids x 7, 1 Canister Body
60102	566309.2	2367936	4+22.1	404	3/29/2016	Propellant Canister Lid x 1
60103	566326	2367971	4+57.7	387.8	3/29/2016	Propellant Canister Lids x 3, 1 Canister ring
60104	566310.1	2367985	4+71.3	403.9	3/30/2016	2 prop Can Lids and locking ring
60105	566418.7	2367963	4+50.8	294.9	3/28/2016	1"x18"x 1/4" Metal Strap
60106	566419.6	2367953	4+41.2	293.9	3/28/2016	1 Deteriorated Canister Lid
60107	566416.2	2367937	4+24.8	297	3/28/2016	Tri Canister Lid x 1, Canister Band
60108	566411.8	2367926	4+14.3	301.3	3/28/2016	Canister x 1, Canister Ring x 1, Propellant Canister Lids x 7
60109	566274.9	2368034	5+19.3	439.8	3/29/2016	1 Propellant Lid Locking handle
60110	566221.2	2368025	5+09.4	493.4	3/29/2016	Propellant Canister Lids x 22
60111	566216.8	2368017	5+01.6	497.7	3/29/2016	Propellant Canister Lids x 20
60112	566216.4	2368014	4+98.6	498	3/29/2016	Propellant Canister Lids x 20
60113	566213.3	2368013	4+97.3	501.1	3/29/2016	Propellant Canister Lids x 20
60114	566204.5	2368019	5+03.6	510	3/29/2016	Propellant Canister Lids x 8
60115	566200.3	2367997	4+82.0	513.8	3/29/2016	Propellant Canister Lids x 21
60116	566193.5	2367985	4+69.3	520.4	3/29/2016	Propellant Canister Lids x 1, Propellant Canister x 1
60117	566184	2368058	5+42.2	531	3/29/2016	Propellant Canister Lids x 4, Propellant Canister x 2
60118	566131.3	2368069	5+52.1	583.9	3/29/2016	6 Prop Can Lids
60119	566110	2368076	5+59.5	605.3	3/29/2016	6 Prop Can Lids
60120	566169.3	2368108	5+91.9	546.5	3/29/2016	2 T Posts
60121	566192.7	2368112	5+96.1	523.1	3/29/2016	Nothing Found
60122	566151.4	2368173	6+56.6	565.3	3/29/2016	Barbed Wire
60123	566127.4	2368201	6+84.7	589.8	3/29/2016	Prop Can Tube
60124	566067.1	2368231	7+13.7	650.6	3/29/2016	Prop Can and Lid
60125	566052.1	2368336	8+18.0	667.1	3/29/2016	Nothing Found
60126	566024.9	2368334	8+16.2	694.4	3/29/2016	Prop Can and Lid
60127	566017.8	2368338	8+19.8	701.5	3/29/2016	Nothing Found
60155	566597.7	2367707	1+97.8	112	3/28/2016	Prop Can and Lid
60157	566628	2367797	2+88.1	83.2	3/28/2016	Propellant Canister Lid
60158	566626.1	2367815	3+06.5	85.3	3/28/2016	Propellant Canister Lid

Project: Camp Ravenna
Ravenna, Ohio .
Date: May 17, 2011
Coordinates are based on the
Ohio State Plane Coordinate
North Zone, 1983 Datum
All Anomalies < 9 inches in depth
102 Locations

Flag	Northing	Easting	Station	Offset	DATE Collected	Description of Finds
60159	566614.2	2367815	3+05.4	97.2	3/28/2016	Propellant Canister Lids x 38
60160	566605.8	2367813	3+04.0	105.5	3/28/2016	Propellant Canister Lids x 25
60161	566599.4	2367811	3+01.8	111.9	3/28/2016	Propellant Canister Lids x 2
60162	566599.9	2367806	2+96.5	111.4	3/28/2016	Nothing Found
60163	566598.1	2367798	2+88.5	113	3/28/2016	Nothing Found
60164	566611.1	2367795	2+86.0	100	3/30/2016	Nothing Found
60165	566566.7	2367839	3+29.6	145.1	3/28/2016	24" Pipe Wrench, 1- Canister, Propellant Canister Lids x 9
60166	566570.8	2367846	3+36.5	141.1	3/28/2016	Geo Rocks

CLEAR

DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

DOC IDEN	RI FROM	M&S	UI	QUANTITY	SER	SUPPLEMENTARY ADDRESS	SIG	FUND	DISTRIBUTION	PROJECT	PRI	REQD DEL DATE	ADV	RI	O/P	COND	MGT
RAV			LB	1760			S	XP			H	G					

UNIT PRICE: DOLLARS 0 CTS 00
1. TOTAL PRICE: DOLLARS 0 CTS 00
2. SHIP FROM: RVAPP Portage/Trumble, Ohio
3. SHIP TO: Falls Recycling 1536A 1st St. NewtonFalls Oh
4. MARK FOR:
5. DOC DATE: 30 Mar16
6. NMFC:
7. FRT RATE:
8. TYPE CARGO:
9. PS: U
10. QTY. REC'D:
11. UP:
12. UNIT WEIGHT:
13. UNIT CUBE:
14. UFC:
15. SL: 0
16. FREIGHT CLASSIFICATION NOMENCLATURE:
17. ITEM NOMENCLATURE: Debris, Scrap Metal
18. TY CONT:
19. NO CONT:
20. TOTAL WEIGHT: 1760
21. TOTAL CUBE:
22. RECEIVED BY: Falls Recycling (See PO receipt)
23. DATE RECEIVED: 03/30/2016

24. DOCUMENT NUMBER & SUFFIX (30-44)

Client: Louisville District COE
Contractor: PIKA International Inc.
Contract #: W912QR-12-F-0212

25. NATIONAL STOCK NO. & ADD (8-22)

Scrap Metal
Load Number - RVAAP-80-001

26. RIC (4-6) UI (23-24) QTY (25-29) CON CODE (71) DIST (55-56) UP (74-80)

"This certifies and verifies that the material listed has either 1) been subjected to a 100-percent inspection and an independent 100-percent re-inspection, or 2) been processed by a DDESB-approved process with an appropriate post-processing inspection. To the best of our knowledge and belief, the material listed is free of explosive hazards and is Material Documented as Safe (MDAS)"

27. ADDITIONAL DATA

Cameron Wenzel, Senior UXO Supervisor
PIKA International, Inc.
Certifier's Signature
Ph# (281) 543-3316

Grady Bendel, UXOQC Specialist
PIKA International, Inc
Verifier's signature
Ph # (540) 354-9109

1

PREVIOUS EDITION MAY BE USED

FormFlow (DLA)

DD FORM 1348-1A, JUL 91 (EG) ISSUE RELEASE/RECEIPT DOCUMENT

DOC IDEN	RI FROM	M&S	UI	QUANTITY	SER	SUPPLEMENTARY ADDRESS	SIG	FUND	DISTRIBUTION	PROJECT	PRI	REQD DEL DATE	ADV	RI	O/P	COND	MGT
RAV			LB	1760			S	XP			H	G					

UNIT PRICE: DOLLARS 0 CTS 00
1. TOTAL PRICE: DOLLARS 0 CTS 00
2. SHIP FROM: RVAPP Portage/Trumble, Ohio
3. SHIP TO: Falls Recycling 1536A 1st St. NewtonFalls Oh
4. MARK FOR:
5. DOC DATE: 30 Mar16
6. NMFC:
7. FRT RATE:
8. TYPE CARGO:
9. PS: U
10. QTY. REC'D:
11. UP:
12. UNIT WEIGHT:
13. UNIT CUBE:
14. UFC:
15. SL: 0
16. FREIGHT CLASSIFICATION NOMENCLATURE:
17. ITEM NOMENCLATURE: Debris, Scrap Metal
18. TY CONT:
19. NO CONT:
20. TOTAL WEIGHT: 1760
21. TOTAL CUBE:
22. RECEIVED BY: Falls Recycling (See PO receipt)
23. DATE RECEIVED: 03/30/2016

24. DOCUMENT NUMBER & SUFFIX (30-44)

Client: Louisville District COE
Contractor: PIKA International Inc.
Contract #: W912QR-12-F-0212

25. NATIONAL STOCK NO. & ADD (8-22)

Scrap Metal
Load Number - RVAAP-80-001

26. RIC (4-6) UI (23-24) QTY (25-29) CON CODE (71) DIST (55-56) UP (74-80)

"This certifies and verifies that the material listed has either 1) been subjected to a 100-percent inspection and an independent 100-percent re-inspection, or 2) been processed by a DDESB-approved process with an appropriate post-processing inspection. To the best of our knowledge and belief, the material listed is free of explosive hazards and is Material Documented as Safe (MDAS)"

27. ADDITIONAL DATA

Cameron Wenzel, Senior UXO Supervisor
PIKA International, Inc.
Certifier's Signature
Ph# (281) 543-3316

Grady Bendel, UXOQC Specialist
PIKA International, Inc
Verifier's signature
Ph # (540) 354-9109

PREVIOUS EDITION MAY BE USED

FormFlow (DLA)

2

Falls Recycling LLC.

1536A 1st street
Newton Falls, OH 44444

Phone # 330-872-0402
Fax # 330-872-0595

Purchase Order

Date	P.O. No.
3/30/2016	72844

Vendor
Cameron Wenzel 1063 Overton Hills Dr Hendersonville NC 28739

Ship To
Falls Recycling LLC. 1536A 1st Street Newton Falls, Ohio 44444 WWW.FALLSRECYCLING.COM

Item	Description	Qty	U/M	Rate	Amount
misc FE	miscellaneous iron	1,760		0.044	77.44

Total $77.44

11060
9300

X

By Signing, You Attest That Material Being Sold Is Not Stolen Or Of False Ownership