









FINAL

Response Action Completion and Closure Report for the Northern Burning Ground
New River Unit (RAAP-044)

Radford Army Ammunition Plant Radford, Virginia

Prepared for: Radford Army Ammunition Plant

October 2010



ATK Armament Systems Energetic Systems Radford Army Ammunition Plant Route 114, P.O. Box 1 Radford, VA 24143-0100

www.atk.com

October 15, 2010

Mr. James L. Cutler, Jr. Virginia Department of Environmental Quality 629 East Main Street Richmond, VA 23219

Subject: Transmittal Acknowledgement,

Final Response Action Completion and Closure Report for the Northern Burning Ground, New River Unit (RAAP-044) April 2010

Dear Mr. Cutler:

This letter is to acknowledge transmittal of the subject document that was sent to you on October 12, 2010. Enclosed is a copy of the 12 October 2010 transmittal email.

Please coordinate with and provide any questions or comments to myself at (540) 639-8658, Jerry Redder ATK staff (540) 639-7536 or Jim McKenna, ACO Staff (540) 731-5782.

Sincerely,

P.W. Holt, Environmental Manager

Alliant Techsystems Inc.

c: Karen Sismour

Virginia Department of Environmental Quality

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Richmond, VA 23218

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Tuesday, October 12, 2010 2:04 PM

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Subject:

FW: Radford NRU - NBG Completion Report (UNCLASSIFIED)

Importance:

High

Classification: UNCLASSIFIED

Caveats: FOUO

All,

Below are the FedEx Tracking Numbers for the Final Northern Burning Ground Completion Report. As listed in the table below, many of the recipients will only be receiving revised cover pages for the report as there were no changes to the Draft Version. Please let me know if you have any questions.

Thank you for your support of the Radford AAP Installation Restoration Program. Jim McKenna

Recipient

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Fed Ex Tracking Number

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- 2 CDs w/ full report

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Richard Mendoza

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Caveats: FOUO



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October 7, 2010

Mr. Jim McKenna Radford Army Ammunition Plant Route 114, P.O. Box 1 Radford, Virginia 24143-0100

Re: Response Action Completion Report- Northern Burning Ground-NRU

Dear Mr. McKenna:

Douglas W. Domenech

Secretary of Natural Resources

The Virginia Department of Environmental Quality (VDEQ) has reviewed the Draft Response Action Completion and Closure Report for the Northern Burning Ground at the New River Unit (RAAP-044). VDEQ has no further comments and the report can be submitted as Final.

Please contact me at (804) 698-4498 if you have any questions or comments regarding the above site.

James L. Cutler, Jr., CPG

Federal Facilities Project Manager

cc: Paige Holt, ATK

Aziz Farahmand, VDEQ-BRRO



DEPARTMENT OF THE ARMY US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL) 5158 BLACKHAWK ROAD ABERDEEN PROVING GROUND, MD 21010-5403

MCHB-TS-REH

7 APR 2010

MEMORANDUM FOR Office of Environmental Quality, Radford Army Ammunition Plant (SJMRF-OP-EQ/Mr. Jim McKenna), P.O. Box 2, Radford, VA 24143-0002

SUBJECT: Draft Response Action Completion and Closure Report for the Northern Burning Ground New River Unit (RAAP-044), Radford Army Ammunition Plant, Virginia, April 2010

- 1. The US Army Public Health Command (Provisional), formerly the US Army Center for Health Promotion and Preventive Medicine, reviewed the subject document on behalf of the Office of The Surgeon General pursuant to Army Regulation 200-1 (Environmental Protection and Enhancement). We appreciate the opportunity to review the report.
- 2. We concur with the certification that the remedial actions achieved the Remedial Action Objectives and the site is suitable for clean closure and unrestricted future use.
- 3. The document was reviewed by Mr. Dennis Druck, Environmental Health Risk Assessment Program. He can be reached at DSN 584-2953, commercial (410) 436-2953 or electronic mail, dennis.druck@us.army.mil.

FOR THE COMMANDER:

JEFFREY S. KIRKPATRICK Director, Health Risk Management

CF:
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USACE (CEHNC-CX-ES)
USAEC (IMAE-CD/Mr. Rich Mendoza)



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April 9, 2010

Mr. James L. Cutler, Jr. Virginia Department of Environmental Quality 629 East Main Street Richmond, VA 24143-0100

Subject:

Transmittal Acknowledgement,

Draft Response Action Completion and Closure Report for the Northern Burning Ground, New River

Unit (RAAP-044) April 2010

Dear Mr. Cutler:

This letter is to acknowledge transmittal of the subject document that was sent to you on April 6, 2010. Enclosed is a copy of the 6 April 2010 transmittal email.

Please coordinate with and provide any questions or comments to myself at (540) 639-8658, Jerry Redder ATK staff (540) 639-7536 or Jim McKenna, ACO Staff (540) 731-5782.

Sincerely

P.W. Holt, Environmental Manager

Alliant Techsystems Inc.

:: Karen Sismour

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Redder, Jerome; Lohman, Elizabeth; Mendoza, Rich; Meyer, Tom NAB02; Sismour, Karen;

Ryan, Susan M CIV USA IMCOM; Flint, Jeremy

Subject:

Draft Response Action Completion Closure Report for the Northern Burning Ground, New

River Unit (UNCLASSIFIED)

importance:

High

Classification: UNCLASSIFIED

Caveats: FOUO

All,

ARCADIS will send the subject report out today to the POCs and tracking numbers below:

James McKenna	7985	4101	8840
Richard Mendoza	7985	4102	2007
Susan Ryan (San Antonio)	7934	1880	4338
Tom Meyer	7934	1880	7186
Dennis Druck	7985	4103	0233
James Cutler	7985	4103	3416
Karen Sismour	7985	4103	6286
Elizabeth Lohman	7934	1881	8893

Thank you for your support of the Radford AAP Installation Restoration Program.

Jim McKenna

Classification: UNCLASSIFIED

Caveats: FOUO

FINAL

Response Action Completion and Closure Report for the Northern Burning Ground, New River Unit (RAAP-044)

Radford Army Ammunition Plant, Radford, Virginia

October 2010

Christopher Kalinowski Site Manager

plane Mone

Diane D. Wisbeck Project Manager

FINAL Response Action Completion and Closure Report for the Northern Burning Ground, New

Radford Army Ammunition Plant Radford, Virginia

River Unit (RAAP-044)

Prepared for: U.S. Army

Prepared by:
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Our Ref.:

GP08RAAP.4NBG

Date:

October 2010

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1.	Introduction			1-1
	1.1	Site Hi	story	1-2
	1.2	Purpos	se and Objectives of Remedial Action	1-2
	1.3	Statuto	ory and Regulatory Authority	1-3
2.	Remed	lial Acti	ion Requirements	2-1
	2.1	Cleanu	up Levels	2-1
	2.2	Attainn	nent of Cleanup Levels	2-1
	2.3	Planne	ed Response Action Area	2-1
3.	Remed	lial Acti	ion Implementation	3-1
	3.1	Projec	t Organization	3-1
	3.2	Chron	ological Summary of Response Action Activities	3-2
	3.3 Site P		reparation Activities	3-3
		3.3.1	Mobilization and Work Permits	3-3
		3.3.2	Subsurface Utility Clearance	3-3
		3.3.3	Erosion and Sediment Control	3-3
		3.3.4	Site Clearing	3-3
		3.3.5	Truck and Equipment Access/Egress Routes and Loading/Decontamination Pad	3-4
	3.4	Excava	ation and Disposal Activities	3-4
		3.4.1	Pre-Excavation Survey and Boundary Confirmation Sampling	3-4
		3.4.2	Excavation Activities	3-6
		3.4.3	Confirmation Sampling	3-6
		3.4.4	Transportation and Disposal	3-8
	3.5 Site Restoration		estoration	3-8
		3.5.1	Backfill	3-8
		3.5.2	Vegetation	3-9
		3.5.3	Demobilization	3-10

4.	Quality Assurance/Quality Control 4-				
	4.1	Summary of the Electronic Validation Review Report	4-1		
5.	Final Inspection 5-				
6.	Alterations to Planned Response Action 6-				
7.	Future Requirements 7-				
8.	Certification 8-				
9.	Refere	nces	9-1		
Tal	bles				
	3-1	Excavation Boundary Confirmation Sampling Results			
	3-2	Excavation Footprint Confirmation Sampling Results			
	3-3	Waste Disposal Summary			
	3-4	Backfill Material Sampling Results			
Fig	jures				
	1-1	RFAAP-NRU Facility Location			
	1-2	New River Unit Study Areas			
	1-3	Northern Burning Ground Site Layout			
	2-1	Planned Response Action Area			
	3-1	Erosion Protection			
	3-2	Truck Loading/Decontamination Pad and Road Improvements			
	3-3	Excavation Boundary Confirmation Sampling Results			
	3-4	Excavation Base Confirmation Sampling Results			
Ар	pendice	s			
	Α	Laboratory Analytical Reports from Confirmation Sampling			

В

Site Photographs

- C Waste Disposal Manifests, Weigh Tickets, and Certificates of Disposal
- D Laboratory Analytical Reports for Backfill Material
- E Laboratory Data Validation Review

Acronyms and Abbreviations

AEC U.S. Army Environmental Command

ARAR Applicable or Relevant and Appropriate Requirements

bgs Below Ground Surface

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CES Construction and Environmental Services

CFR Code of Federal Regulations

EE/CA Engineering Evaluation/Cost Analysis

EPC Exposure Point Concentration
EQ Environmental Quality Company

ft Feet

ft msl Feet Above Mean Sea Level IRP Installation Restoration Program

MMA Main Manufacturing Area

NBG Northern Burning Ground

NCP National Contingency Plan

NROW New River Ordinance Works

NRU New River Unit

PBC Performance Based Contract

QAPA Quality Assurance Plan Addendum

QA/QC Quality Assurance/Quality Control

QAPP Quality Assurance Project Plan

QC Quality Control

RAL Remedial Action Level
RAO Remedial Action Objective
RFAAP Radford Army Ammunition Plant
RSL Regional Screening Levels

SVOC Semi-Volatile Organic Compound

UCL Upper Confidence Limit

USEPA United States Environmental Protection Agency
VDEQ Virginia Department of Environmental Quality

VOC Volatile Organic Compound

XRF X-Ray Fluorescence

Introduction

1. Introduction

ARCADIS U.S., Inc. (ARCADIS) has been retained by the United States Army Environmental Command (AEC) to perform Installation Restoration Program (IRP) activities at the Radford Army Ammunition Plant (RFAAP). The RFAAP facility is located in the mountains of southwestern Virginia and consists of two noncontiguous units: the Main Manufacturing Area (MMA) and the New River Unit (NRU). The MMA is located approximately 5 miles northeast of the City of Radford, in Montgomery County, Virginia. The NRU is located about six miles west of the MMA, near the town of Dublin, in Pulaski County, Virginia (Figure 1-1). The IRP activities for both the RFAAP-MMA and the NRU are being conducted as part of a Performance Based Contract (PBC) awarded to ARCADIS under contract W91ZLK-05-D-0015: Task Order 0002. The RFAAP-NRU is managed under the Comprehensive Environmental Response and Compensation Liability Act (CERCLA).

This site-specific Response Action Completion and Closure Report has been prepared to summarize the remedial activities completed at the Northern Burning Ground (NBG) area at RFAAP-NRU. This report also provides certification that the activities achieved the remedial action objectives that were outlined for the NBG in the Removal Action Work Plan (ARCADIS 2009a), the Engineering Evaluation/Cost Analysis (EE/CA) Report (ARCADIS 2009c), and the Action Memorandum for the Soil Removal Action at the Northern Burning Ground (RFAAP 2009). The following major sections are included in this report:

- Introduction;
- Remedial Action Requirements;
- Remedial Action Implementation;
- Quality Assurance/Quality Control
- Final Site Inspection;
- Construction Alterations;
- Future Requirements; and,
- Certification.

Introduction

Each section discusses specific site issues leading to the completion of the remedial action activities. Data collected throughout the closure activities are summarized in tables or appended for reference as supporting documentation.

1.1 Site History

The RFAAP-NRU was established in 1940, and was originally known as the New River Ordinance Works (NROW). The NROW was incorporated into the RFAAP in 1945. The RFAAP-NRU facility operated as a bag manufacturing and loading plant for artillery, cannon, and mortar projectiles during World War II. Although active manufacturing activities at the RFAAP-NRU were reported to have ceased in the 1940's (after World War II), portions of the RFAAP-NRU are still utilized as storage facilities for operations at the MMA.

The area of the RFAAP-NRU identified as the NBG was temporarily utilized as a burning ground for the facility. Anecdotal evidence suggests that the burning operations may have been conducted to remove energetics from components used in, or impacted by, the former manufacturing activities at the site. No buildings have existed at the NBG site; burning operations were conducted directly on the ground surface.

1.2 Purpose and Objectives of Remedial Action

Based on the elevated risk levels presented by lead and chromium in soil at the NBG, a remedial action was deemed necessary for the site. In order to guide the remedial process, two primary Remedial Action Objectives (RAOs) were identified for the NBG. The first RAO was to minimize the potential for human exposure to soils containing lead and chromium at concentrations above applicable cleanup levels, thus reducing the potential for adverse health affects associated with exposure to lead and chromium in soil. The second RAO was to minimize the potential for elevated concentrations of lead and chromium in soil to migrate to un-impacted areas. Following the evaluation of the available remedial options presented within the EE/CA, a soil removal action was selected for the NBG that achieved both of the RAO's and will allow for unrestricted future development of the site. The selected removal action was excavation and off-site disposal of soils containing lead and chromium at concentrations above their respective Remedial Action Levels RALs (see Section 2.2). This removal action will be the final remedy for the NBG.

Introduction

1.3 Statutory and Regulatory Authority

The removal action at the NBG was undertaken by the United States Army as part of the IRP at Radford Army Ammunition Plant. The remediation activities at the NRU are being managed under CERCLA, with the Virginia Department of Environmental Quality (VDEQ) as the lead review agency. The investigation, reporting, and remedial actions conducted at the NRU are being conducted in accordance with the requirements outlined in National Oil and Hazardous Substances Pollution Contingency Plan (aka National Contingency Plan [NCP]), 40 Code of Federal Regulations (CFR) Part 300.

The NBG site presented a relatively time-sensitive, non-complex problem that could be addressed relatively cost effectively. Based on the considerations outlined in 40 CFR 300.415(b)(2)(iv), the removal action conducted at the NBG was appropriate due to the presence of elevated levels of hazardous substances (i.e., chromium and lead) in soils that were largely at or near the surface which had the potential to migrate to adjacent soils, drainage ditch sediments, and groundwater. The removal action at the NBG complied with all Applicable or Relevant and Appropriate Requirements (ARARs) outlined in the EE/CA.

Remedial Action Requirements

2. Remedial Action Requirements

2.1 Cleanup Levels

Based on the assessment of the available remedial alternatives for the NBG site presented in the EE/CA, excavation and off-site disposal of impacted soils was determined to be the most effective option for achieving the RAOs and protecting human health and the environment. Although the current and reasonably anticipated future use of the NBG site is military/industrial, a cost benefit analysis indicated that in this specific case it was to the ARMY's advantage to remediate to residential levels and eliminate the need for long term monitoring and/or land use controls (LUCs). In the absence of any state mandated soil clean-up levels, the United States Environmental Protection Agency's (USEPA) Regional Screening Levels (RSLs) for residential soil (USEPA 2009) were used as the Cleanup Levels for the site. The residential soil RSLs for chromium and lead are 280 mg/kg and 400 mg/kg, respectively.

2.2 Attainment of Cleanup Levels

To facilitate the evaluation of the attainment of the residential cleanup levels, Remediation Action Levels (RALs) were developed as part of the EE/CA following USEPA's *Guidance on Surface Soil Cleanup at Hazardous Waste Sites* (USEPA 2005). As defined by USEPA (2005), the RAL is the maximum concentration that may be left in place within an exposure unit such that the predicted average concentration is at or below the Cleanup Level. RALs for lead (3,000 mg/kg) and chromium (1,620 mg/kg) were established as the not-to-exceed levels for the NBG in the EE/CA.

2.3 Planned Response Action Area

The comprehensive soil sampling events completed at the site between 1997 and 2008 clearly indicated that the highest concentrations of lead and chromium at the NBG were confined to the central portion of the site. This area is believed to be where the former burning activities were completed. The planned response action area was approximately 110 ft by 70 ft, and encompassed the central portion of the site where the highest lead and chromium concentrations were historically detected (Figure 2-1). The impacts within this area were primarily confined to the interval from ground surface to approximately 1 ft below ground surface (bgs). However, lead and chromium were detected at elevated concentrations at a depth of approximately 4 ft bgs within a small (approximately 35 ft by 10 ft) portion of the site.

Remedial Action Implementation

3. Remedial Action Implementation

The field activities for the NBG remedial action were initiated on December 7, 2009 and were completed by December 11, 2009. This section provides an outline of the project organization, and details the various activities that were completed during implementation of the remedial action at the Northern Burning Ground.

3.1 Project Organization

ARCADIS served as the prime contractor for the remedial action implementation at the NBG. ARCADIS utilized internal staff to perform the majority of the related site work, including the site preparation, excavation, confirmation sampling, and site restoration activities. However, ARCADIS did utilize the services of various subcontractors to assist with the performance of several key components, including; utility location, waste coordination, waste hauling, backfill delivery, and laboratory analytical services. Following is a list of the key personnel/subcontractors involved in the performance of the work:

• Project Manager: Diane Wisbeck (ARCADIS)

Site Manager: Christopher Kalinowski (ARCADIS)

Construction Crew:
 ARCADIS – Construction and Environmental

Services (CES) Division

• Facility Work Permits: Matt Alberts (Alliant Techsystems, Inc.)

Construction Supervisor: David Kingsley (ARCADIS)

• Confirmation Sampling: Jason Tillotson (ARCADIS)

Utility Clearance: Mid-Atlantic Utility Locating, LLC

• Waste Coordinator: Terri Fort (Capitol Environmental Services, Inc.)

Waste Hauler:
 US Bulk Transport, Inc.

Backfill Delivery:

JWB Contractors, LLC

• Laboratory Analytical Services: Empirical Laboratories, Inc.

Remedial Action Implementation

• Health and Safety Supervisor: Christopher Kalinowski (ARCADIS)

3.2 Chronological Summary of Response Action Activities

The following table provides a daily chronology of activities that were completed during the NBG response action. Further details on the various activities completed during the response action are also provided in Sections 3-3 through 3-5.

Date	Description of Activities
7 December 2009	Mobilized personnel and equipment to the site, obtained facility work permits, performed utility location, installed silt fencing, cleared vegetation from work area, and laid out initial/planned boundaries of the excavation.
8 December 2009	Performed excavation perimeter confirmation sampling, set up truck loading and decontamination pad, improved dirt access road on the east side of the site, began excavation of lead and chromium impacted soils, loaded four (4) dump trailers for transportation to the disposal facility.
9 December 2009	Continued excavation of lead and chromium impacted soils, loaded a total of ten (10) dump trailers for transportation to the disposal facility, performed confirmation soil sampling in areas where target depth was reached.
10 December 2009	Completed excavation of lead and chromium impacted soils, loaded two (2) dump trailers for transportation to the disposal facility, completed confirmation soil sampling from excavation base and the boundaries of the expanded footprint, decontaminated equipment used in excavation activities, backfilled excavation area
11 December 2009	Seeded excavation area and put down straw ground cover, demobilized equipment and personnel from the site.
21 January 2010	Performed final site inspection.
Summer 2010	Planned abandonment of groundwater monitoring wells and removal of silt fencing from NBG site. Reseeding as necessary.

Remedial Action Implementation

3.3 Site Preparation Activities

3.3.1 Mobilization and Work Permits

ARCADIS' field personnel and equipment were mobilized to RFAAP-NRU on December 7, 2009 for performance of the removal action activities at the NBG site. Prior to conducting any work on-site, an Area Entry Permit and a Hot Work Permit were obtained from the RFAAP Safety Department. No other permits were required for the performance of this work.

3.3.2 Subsurface Utility Clearance

Prior to initiating any intrusive activities at the site, ARCADIS' field personnel completed a preliminary site inspection along with the RFAAP Safety Department to identify any potential surface or subsurface impedances to the proposed work. ARCADIS also utilized the subcontract services of Mid-Atlantic Utility Locating, LLC, to perform utility clearance services at the site on December 7, 2009. No utilities or other subsurface impedances were identified at the site.

3.3.3 Erosion and Sediment Control

ARCADIS erected silt fencing along the northern perimeter of the excavation area to prevent sediment transport from the work area to the drainage ditch and culvert on the northern perimeter of the site. Hay bales were also placed along the drainage ditch to provide additional protection for the storm-water culvert that passes underneath the paved surface road on the north side of the NBG. The silt fencing and hay bales will be left in place until site vegetation has been re-established. The silt fencing is tentatively scheduled to be removed during the summer of 2010. The location of the silt fencing and hay bales are depicted in Figure 3-1.

3.3.4 Site Clearing

ARCADIS cleared a total of 10 trees and several small woody shrubs from the excavation footprint and surrounding area prior to initiating the excavation activities. All cleared vegetation was spread into the wooded areas surrounding the NBG site and will be allowed to decay naturally (i.e., trees were laid down in wooded areas and large branches were removed). Tree stumps outside the excavation area were cut down to

Remedial Action Implementation

near ground surface and left in place, while tree stumps within the excavation footprint were removed during the excavation activities and disposed of with the excavated soil.

3.3.5 Truck and Equipment Access/Egress Routes and Loading/Decontamination Pad

Due to wet weather conditions and site access restrictions, the truck and equipment access/egress routes, and the truck loading/decontamination areas were revised from the locations presented in the Removal Action Work Plan (ARCADIS, 2009a). Rather than have the trucks/dump trailers (used for soil transportation to the disposal facility) utilize the dirt road that loops around the south side of the site to access the work area, the trucks/trailers were kept on the paved road on the north side of the site. A truck loading and decontamination pad constructed with 10-mil polyethylene tarps was set up on the paved road to collect any debris spilled during the truck loading process. The location of the truck loading and decontamination pad is depicted in Figure 3-2. Because the dump trailers were direct loaded and were kept on the paved surface road, minimal on-site truck cleaning/decontamination was required during the removal action. Upon completion of the excavation activities, the excavation equipment was cleaned on the decontamination pad. The decontamination materials and water were disposed of with the soil.

Due to wet soil conditions, a portion of the dirt access road on the western side of the NBG was improved with a gravel base layer to allow dump trucks transporting backfill material to the site to access the work area and to minimize the potential for tracking soil onto the paved roads. The extent of the gravel road improvements are depicted in Figure 3-2. The gravel road improvements were left in place upon completion of the site work.

3.4 Excavation and Disposal Activities

3.4.1 Pre-Excavation Survey and Boundary Confirmation Sampling

Prior to commencing the excavation activities, ARCADIS clearly marked the planned boundaries of the excavation footprint presented in Figure 2-1. The boundaries were defined based on measurements from pre-surveyed benchmark locations (i.e., Monitoring Wells NBG-MW01 and NBG-MW02). To confirm that the planned boundaries of the excavation would encompass the surface soils containing lead and chromium at concentrations above their respective RALs of 3,000 mg/kg and 1,620 mg/kg, eight soil samples (NBG-XRF001 through NBG-XRF008) were collected along the northern perimeter of the planned excavation area. These eight sample locations are depicted in Figure 3-3. As discussed in the Removal Action Work Plan, boundary

Remedial Action Implementation

confirmation samples were not required on the southern half of the excavation due to the abundance of samples collected in that portion of the site during the historical site characterization process. The perimeter confirmation samples were analyzed on-site for lead and chromium using an Innov-X Systems™ portable XRF device that had been calibrated for soil screening.

The results from the initial perimeter confirmation samples indicated that 6 of the 8 samples (NBG-XRF001, NBG-XRF002, NBG-XRF003, NBG-XRF006, NBG-XRF007, and NBG-XRF008) had lead and chromium concentrations below their respective RALs. However, two of the samples (NBG-XRF004 and NBG-XRF005) had lead concentrations in excess of the lead RAL of 3,000 mg/kg. As shown in Figure 3-3, sample locations NBG-XRF004 and NBG-XRF005 were located near the northern tip of the planned excavation footprint.

In response to the lead detections at NBG-XRF004 and NBG-XRF005, the northern boundary of the excavation footprint was expanded approximately 6 ft to the north. The boundaries of the expanded footprint are depicted in Figure 3-3. XRF analyses conducted on three soil samples (NBG-XRF032, NBG-XRF033, and NBG-XRF036) collected along the expanded excavation boundary indicated that lead and chromium concentrations were well below their respective RALs. These results confirmed that the excavation footprint would encompass the target lead and chromium concentrations.

The results of all XRF analyses for the perimeter soil samples are presented in Table 3-1 and Figure 3-3.

In addition to the field XRF analyses, 3 of the 11 samples collected during the boundary confirmation sampling activities were submitted for laboratory analysis of lead and chromium by USEPA Method 6010B. The results from these samples, which included NBG-XRF002(0-0.5), NBG-XRF005(0-0.5) and NBG-XRF007(0-0.5) are presented along with the XRF results in Table 3-1. The laboratory analytical reports are presented in Appendix A. The analytical results indicated that the chromium concentrations in all three samples were far lower the chromium RAL of 1,620 mg/kg. The lead concentrations detected in NBG-XRF002(0-0.5) and NBG-XRF007(0-0.5) were also well below the lead RAL of 3,000 mg/kg. The lead concentration detected at NBG-XRF005(0-0.5) was higher than the RAL, which corresponds with the field XRF result for this location. As discussed above, the excavation boundary was expanded at the NBG-XRF005 sample location due to the non-complying lead concentration.

Remedial Action Implementation

3.4.2 Excavation Activities

The excavation of the lead and chromium impacted soils at the NBG commenced on December 8 and was completed on December 10, 2009. The excavation was performed using a DEERE Model 200C-LC excavator equipped with a 48-inch wide bucket and was sequenced from south to north so that the excavator did not have to track back through areas where excavation was complete. The excavator was utilized for both excavation and truck loading, therefore, no other equipment was required during the excavation activities.

The excavation was completed to the planned 1-ft and 4-ft depth intervals shown in Figure 2-1. However, the depth of excavation was increased in two areas within the north-central portion of the excavation footprint because debris/ash from the former burning operations was encountered below ground surface during the course of excavation (see site photographs in Appendix B). XRF analyses of the debris/ash indicated that lead concentrations were in excess of the 3,000 mg/kg RAL; therefore, the depth of the excavation was increased to the bottom of the debris/ash layers in these areas. The debris/ash layers extended to a depth of approximately 2 ft bgs in one area and ranged from 2 to 3 ft bgs in the other. Field sampling confirmed that the lead and chromium concentrations at the base of the debris layers were below their respective RALs. The final depths of excavation and the approximate locations of the debris/ash, which correspond to confirmation sample locations NBG-XRF021, NBG-XRF023 and NBG-XRF026, are depicted in Figure 3-4. No other debris/ash was encountered during the course of site work.

3.4.3 Confirmation Sampling

A total of 25 sample locations (NBG-XRF009 through NBG-XRF035) were laid out within the base of the excavation for the purpose of collecting soil samples to confirm that the vertical extent of the excavation was sufficient to remove soils containing lead and chromium at levels greater than the RALs.. The first round of confirmation samples included 22 samples from the base of the 1-ft deep excavation area. XRF analysis of the excavation base confirmation samples, which represented the 1.0 to 1.5 ft bgs interval, indicated that 19 of the 22 the samples contained lead and chromium at concentrations below their respective RALs. However, as discussed in Section 3.4.2, three excavation base confirmation samples [NBG-XRF021(1-1.5), NBG-XRF023(1-1.5), and NBG-XRF026(1-1.5)] were collected within debris/ash layers uncovered during excavation and contained lead at concentrations above the 3,000 mg/kg RAL. As a result of the lead detections, the depth of excavation was increased in the vicinity

Remedial Action Implementation

of the 3 non-complying samples to the bottom of the debris/ash layer (see Figure 3-4, which depicts the final depth of excavation).

A second round of confirmation samples were collected at sample locations NBG-XRF021, NBG-XRF023, and NBG-XRF026 once the debris/ash layers detected in these areas had been fully excavated. The depth of the excavation in the vicinity of NBG-XRF023 and NBG-XRF025 ranged from approximately 2 to 3 ft bgs; therefore the samples collected at these locations [NBG-XRF023(3-3.5) and NBG-XRF026(2-2.5)] represent the soils underneath the debris layer. The depth of the excavation near NBG-XRF021 extended to approximately 2 ft bgs; therefore the sample collected at this location [NBG-XRF021(3-3.5)] represents the 2.0 to 2.5 ft bgs interval. XRF analysis of these three samples indicated that lead and chromium concentrations were well below their respective RALs; therefore, no additional excavation was required.

The last group of confirmation soil samples were collected from the base of the small 4-ft deep excavation area located near the central portion of the excavation footprint (see Figures 2-1 and 3-4). A total of three samples [NBG-XRF016(4-4.5), NBG-XRF024(4-4.5) and NBG-XRF025(4-4.5)] were collected from the deep area, representing the 4.0 to 4.5 ft bgs interval. XRF analysis indicated that lead and chromium concentrations were well below their respective RALs in each of these three samples; therefore, no additional excavation was required in this area.

The XRF results of all 28 soil samples collected during the confirmation sampling program are presented in Table 3-2 and Figure 3-4. The results indicate that soils containing lead and chromium at concentrations greater than their respective RALS were successfully removed from the NBG site.

In addition to the field XRF analyses, 12 of the 28 samples collected during the excavation base confirmation sampling activities were split and submitted for laboratory analysis of lead and chromium by USEPA Method 6010B. The results from these samples, which included NBG-XRF010(1-1.5), NBG-XRF013(1-1.5), NBG-XRF015(1-1.5), NBG-XRF017(1-1.5), NBG-XRF020(1-1.5), NBG-XRF022(1-1.5), NBG-XRF023(3-3.5), NBG-XRF025(4-4.5), NBG-XRF028(1-1.5), and NBG-XRF031(1-1.5), are presented along with the XRF results in Table 3-2. The laboratory analytical reports are presented in Appendix A. Overall the laboratory analytical results correlated well with the XRF results for chromium and lead.

The results indicated that the chromium concentrations in all 12 samples were far lower the chromium RAL of 1,620 mg/kg, which corresponds with the XRF results. The laboratory lead results also agree with the XRF results in that the lead concentrations

Remedial Action Implementation

detected in 10 of the 12 samples were lower than the lead RAL of 3,000 mg/kg and that lead was greater than the RAL in 2 of the samples. The two samples where the laboratory and XRF results indicated lead concentrations higher than the RAL [NBG-XRF021(1-1.5)] and NBG-XRF026(1-1.5)] were collected from the debris/ash layers that were removed from the site during the excavation.

3.4.4 Transportation and Disposal

The excavated soils and decontamination materials from the NBG removal action were direct loaded onto a total of 16 plastic-lined dump trailers for transportation to the disposal facility. The waste was transported by U.S. Bulk Transport, Inc. under approved Uniform Hazardous Waste Manifests to the Environmental Quality Company (EQ) in Belleville, Michigan and disposed of at the Wayne Disposal, Inc. (Wayne Disposal) landfill facility. Wayne Disposal (EPA ID: MID 048 090 633) is a Subtitle C landfill that is fully permitted to receive RCRA hazardous waste. The soil was originally planned to be disposed of at EQ's Subtitle D landfill facility (Michigan Disposal, Inc.) after stabilization; however, due to the possible presence of low-level dioxins in the soil (as indicated by historical data), EQ elected to dispose of the material in the Subtitle C facility instead. Based on the truck weigh tickets, a total of 384.1 tons of material were disposed of at the landfill. Table 3-3, provides a summary of the shipping information on each load (i.e., manifest number, load weight, facility receipt date). Copies of the finalized waste manifests, weigh tickets, and Certificates of Disposal are provided in Appendix C.

3.5 Site Restoration

3.5.1 Backfill

Once all excavation and field confirmation sampling activities were completed, the excavated area was backfilled with common backfill material and graded to be level with the surrounding terrain. After placement and grading of the common backfill, an approximately 3-inch layer of top soil was placed throughout the excavation footprint to assist in re-vegetating the area. Both the common backfill material and the vegetative top soil were obtained from JWB Contractors, LLC of Dublin, Virginia.

Prior to delivery of the backfill material to the site, samples of both the common backfill (NBG-Backfill) and the vegetative top soil (NBG-Topsoil) were submitted for laboratory analyses to ensure that the material came from a "clean" source. The samples were analyzed for volatile organic compounds (VOCs) by USEPA Method 8260B, semi-volatile organic compounds (SVOCs) by USEPA Method 8270C, metals by USEPA

Remedial Action Implementation

Method 6010B, pesticides by USEPA Method 8081A, and herbicides by USEPA Method 8151A.

The analytical results for the common backfill and top soil samples are summarized in Table 3-4 and laboratory analytical reports are provided in Appendix D. The data indicated that the top soil backfill contained arsenic, cobalt and manganese at concentrations slightly above the residential RSLs. Arsenic was the only constituent detected in the common backfill material at a concentration above the residential RSL. While these constituents were present at concentrations slightly higher than the RSL values, the concentrations were all below the naturally occurring background metals concentrations reported in the Facility-Wide Background Study Report (IT 2001) and thus are consistent with levels of these metals in the native soil. No other constituents were detected at concentrations above applicable residential RSLs; however, some organic compounds were detected at low concentrations in both the common backfill and the topsoil samples. However, all or the organic constituents were at concentrations below applicable residential RSLs.

The chromium concentration in the common backfill (33.mg/kg) and top soil (30.8 mg/kg) were both lower than the natural background chromium concentration (65.3 mg/kg) at the facility. The lead concentration in the common backfill material (17 mg/kg) was also below the facility-wide background lead concentration (26.8 mg/kg). The laboratory analytical results for lead from the top soil sample (37.6 mg/kg) indicated that the lead concentration was only slightly higher than the background value, but well below the 400 mg/kg clean up level for lead.

3.5.2 Vegetation

Upon completion of the backfilling activities the excavation footprint, and any other areas of RFAAP-NRU that may have been disturbed by off road vehicle traffic during implementation of the NBG response action, were heavily seeded with annual (winter) ryegrass. The ryegrass seed was sown to help re-establish a vegetative layer in the disturbed areas so as to provide soil stabilization until natural vegetation is reestablished. A heavy straw layer was also placed throughout the disturbed areas to help protect the seed and to provide some measure of soil stabilization until the grass is able to grow. Pictures of the seeded and straw covered excavation footprint are presented in Appendix B.

Remedial Action Implementation

3.5.3 Demobilization

Equipment and personnel were demobilized from the site on Friday, December 11, 2009. Prior to departing the site the crew picked up all trash from the site and made sure that the large braches were removed from the pine trees that had been cleared during the removal action. The crew also repaired several soil ruts where vehicles used in performance of the work had driven off of the narrow paved surface. Grass seed and straw were placed in these areas to help stabilize the soil.

Quality Assurance/Quality Control

4. Quality Assurance/Quality Control

In accordance with the quality assurance/quality control (QA/QC) procedures outlined in the Master Quality Assurance Project Plan (QAPP) (URS 2003) and ARCADIS' Quality Assurance Plan Addendum (QAPA) (ARCADIS 2008), the laboratory data collected during the performance of this site work was validated to verify data usability and to ensure compliance with the data quality objectives. This section summarizes the findings of the laboratory data validation process.

4.1 Summary of the Electronic Validation Review Report

The Electronic Validation Review Report addresses the results of the data validation effort for soil samples collected in support of the site closure at the NBG (see Appendix E). The purpose of the validation review is to determine the reliability of the chemical analyses and the accuracy and precision of information acquired from the laboratory. Data quality was assessed through the review and evaluation of field sampling activities and Quality Control (QC) samples and data associated with the chemical analytical results. An evaluation of QC samples and implications for data quality is provided in full within Appendix E. In general, only minor deficiencies were identified and the data were qualified as appropriate. Overall, the analytical data associated with this investigation event are considered quantitative and usable for the intended purpose. The validation identified only minor deficiencies with the data. The data were qualified, as appropriate, using guidance from the USEPA. One hundred percent of the results are valid for their intended purpose, as qualified by the data validation.

The laboratory data is presented in full within Appendix A.

Final Inspection

5. Final Inspection

A final inspection of the NBG site was conducted by representatives of ARCADIS and the US Army – RAAP on January 21, 2010. Two comments were generated as a result of the site walk. The first comment was in regards to the removal of the temporary erosion control devices. It was agreed that the temporary erosion control devices will be removed from the site during the summer of 2010, once vegetation has been re-established at the site. The second comment concerned the re-vegetation efforts for the site. It was agreed that additional grass seed may be spread at the site during the spring or summer of 2010 if required to stabilize the backfilled area. The attendees at this inspection were as follows:

- James McKenna US Army RFAAP; and,
- Christopher Kalinowski ARCADIS.

Alterations to Planned Response Action

6. Alterations to Planned Response Action

The remedial activities for the NBG were conducted in accordance with the Removal Action Work Plan and achieved the RAOs outlined in the EE/CA for the site. The only deviations from the Work Plan involved the placement of the truck loading and decontamination area; the expansion of the horizontal and vertical extent of the excavation area. The truck loading and decontamination area was moved to the location presented in Figure 3-2 due to site access restrictions. As discussed in Section 3.4.1, the horizontal extent of the excavation was expanded slightly on the northern, boundaries based on the results of the XRF field screening conducted during the pre-excavation boundary confirmation sampling. The depth of the excavation was also increased in two discrete areas during the excavation process due to the presence of debris/ash and the detection of lead at concentrations above the RAL at the planned 1-ft depth interval. Figures 2-1 and 3-4 depict the excavation area as originally intended, and the final expanded excavation area, respectively.

Future Requirements

7. Future Requirements

The remedial actions for the lead and chromium impacted soils have been completed at the NBG site. The results of the sampling program conducted during the excavation activities confirmed that the response action was successful at removing the site soils containing lead and chromium at concentrations above their respective RALs. Therefore, the site is suitable for clean closure and future development of the site should be unrestricted. Long term monitoring and inspection of the site will not be required.

The only future requirements for the site will include removal of the silt fencing and hay bales that were left at the site as temporary erosion control measures. The silt fencing and hay bales are scheduled to be removed from the site during the summer of 2010, once site vegetation has been re-established. ARCADIS will also re-seed the area during the spring or summer of 2010, if the seed sowed during the removal action does not establish adequate ground cover.

Response Action
Completion and Closure
Report for the Northern
Burning Ground

Certification

8. Certification

This Response Action Completion and Closure Report documents the remedial actions that were completed for the Northern Burning Ground study area at RAAP-NRU. The actions were completed as discussed in the Removal Action Work Plan for the Northern Burning Ground and achieved the Remedial Action Objectives outlined in the EE/CA and Action Memorandum for the site. No deficiencies in the work are believed to exist, nor were any documented during confirmation sampling or subsequent inspection. No additional remedial actions are required for the site. As such the site is suitable for clean closure and unrestricted future development.

Response Action
Completion and Closure
Report for the Northern
Burning Ground

References

9. References

- ARCADIS, 2009a. Removal Action Work Plan for the Northern Burning Ground, New River Unit (RAAP-044). Radford Army Ammunition Plant, Radford, Virginia. December.
- ARCADIS, 2009b. DRAFT Remedial Investigation Report, New River Unit (RAAP-044). Radford Army Ammunition Plant, Radford, Virginia, October.
- ARCADIS, 2009c. Engineering Evaluation/Cost Analysis (EE/CA), Northern Burning Ground, New River Unit (RAAP-044). Radford Army Ammunition Plant, Radford, Virginia. July.
- ARCADIS, 2008. DRAFT Quality Assurance Plan Addendum. Radford Army Ammunition Plant, Radford, Virginia, April.
- IT Corporation (IT), 2001. Facility-Wide Background Study Report. Radford Army Ammunition Plant, Virginia. Final Report. December 2001. Delivery Order No. 0013, Contract No. DACA31-94-D-0064.
- Radford Army Ammunition Plant, 2009. Action Memorandum for the Soil Removal Action at the Northern Burning Ground, New River Unit. Radford Army Ammunition Plant, Radford Virginia.
- Shaw, 2003. Internal Draft New River Unit Investigation Report: BDDT, BLA, IAA, NBG, RY & WBG, Radford Army Ammunition Plant. Radford, Virginia. September.
- URS, 2003. Master Quality Assurance Project Plan. Radford Army Ammunition Plant, Radford, Virginia. August.
- U.S. Environmental Protection Agency (USEPA). 2005. Guidance on Surface Soil Cleanup at Hazardous Waste Sites: Implementing Cleanup Levels. Peer Review Draft. Office of Emergency and Remedial Response. EPA 9355.0-91. April.
- U.S. Environmental Protection Agency (USEPA), 1999. Technical Review Workgroup for Lead Guidance Document. Rev 0. April

Response Action
Completion and Closure
Report for the Northern
Burning Ground

References

- U.S. Environmental Protection Agency (USEPA), 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. July 14.
- U.S. Environmental Protection Agency (USEPA), 1993, Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA, Office of Emergency and Remedial Response, Publication 9360.0-32FS, EPA/540/F-94/009, Washington, D.C.
- U.S. Environmental Protection Agency (USEPA), 2009. Oak Ridge National Laboratory (ORNL) Regional Screening Levels (RSLs), December. Internet access: [http://www.epa.gov/region09/superfund/prg/]

Tables

Table 3-1: Boundary Confirmation Soil Sampling Results, Northern Burning Ground New River Unit, Radford Army Ammunition Plant, Radford, Virginia

			Debris	XRF Screeni	ng Results	Laboratory	Analytical
Sample Location ID	Sample Depth (Feet)	Sample Date	Present (yes/no)	Chromium	Lead	Chromium	Lead
		Original Boเ	ındary Confirm	ation Samples			
NBG-XRF001	0 - 0.5	12/08/09	no	<108	1,216	NA	NA
NBG-XRF002	0 - 0.5	12/08/09	no	<83	634	83.5	1,580
NBG-XRF003*	0 - 0.5	12/08/09	no	<119	1,417	NA	NA
NBG-XRF004*	0 - 0.5	12/08/09	no	<i>4</i> 29	6,036	NA	NA
NBG-XRF005*	0 - 0.5	12/08/09	no	<125	3,445	226	3,230
NBG-XRF006	0 - 0.5	12/08/09	no	195	2,403	NA	NA
NBG-XRF007	0 - 0.5	12/08/09	no	<109	436	85.7	742
NBG-XRF008	0 - 0.5	12/08/09	no	188	1,889	NA	NA
		Expan	ded Boundary	Samples			
NBG-XRF032	0 - 0.5	12/10/09	no	<107	615	NA	NA
NBG-XRF033	0 - 0.5	12/10/09	no	<116	445	NA	NA
NBG-XRF036	0 - 0.5	12/10/09	no	<101	915	NA	NA

Screening Criteria	Chromium (mg/kg)	Lead (mg/kg)
Facility-Wide Background ¹	65.3	26.8
Remedial Action Level	1,620	3,000

Notes:

1. From Facility-Wide Background Study Report. (IT 2001)

NA - Not detected.

^{*} The boundaries of the excavation were expanded at NBG-XRF003, NBG-XRF004, and NBG-XRF005; therefore , the soils at these locations were removed from the site.

Table 3-2: Summary of XRF and Laboratory Analytical Results for Excavation Base Confirmation Samples

Northern Burning Ground

New River Unit, Radford Army Ammunition Plant, Radford, Virginia

Sample Location ID	Sample Depth (Feet)	Sample Date	Debris Present (yes/no)		RF Screening Results (mg/kg)		Analytical ults (kg)
				Chromium	Lead	Chromium	Lead
		Shallow Area	Samples (1 ft De	ep Excavation)		
NBG-XRF009	1 - 1.5	12/09/09	no	<96	35	NA	NA
NBG-XRF010	1 - 1.5	12/09/09	no	<101	31	21.7	106
NBG-XRF011	1 - 1.5	12/09/09	no	<88	23	NA	NA
NBG-XRF012	1 - 1.5	12/09/09	no	<98	60	NA	NA
NBG-XRF013	1 - 1.5	12/09/09	no	<101	17	21.2	37.9
NBG-XRF014	1 - 1.5	12/09/09	no	379	1,856	NA	NA
NBG-XRF015	1 - 1.5	12/09/09	no	<99	39	17.3	40.0
NBG-XRF017	1 - 1.5	12/09/09	no	<97	48	24.2	158
NBG-XRF018	1 - 1.5	12/09/09	no	421	2,476	NA	NA
NBG-XRF019	1 - 1.5	12/09/09	no	<93	210	NA	NA
NBG-XRF020	1 - 1.5	12/09/09	no	<133	597	22.3	293
NBG-XRF021*	1 - 1.5	12/09/09	yes	128	6,281	407	5,920
NBG-XRF022	1 - 1.5	12/09/09	no	<116	631	124	1,540
NBG-XRF023*	1 - 1.5	12/09/09	yes	<128	3,748	NA	NA
NBG-XRF026*	1 - 1.5	12/09/09	yes	166	4,458	214	4,040
NBG-XRF027	1 - 1.5	12/09/09	no	<99	29	NA	NA
NBG-XRF028	1 - 1.5	12/09/09	no	<123	902	68.3	1,230
NBG-XRF029	1 - 1.5	12/10/09	no	148	1,912	NA	NA
NBG-XRF030	1 - 1.5	12/10/09	no	<98	295	NA	NA
NBG-XRF031	1 - 1.5	12/10/09	no	117	40	24.7	94.8
NBG-XRF034	1 - 1.5	12/10/09	no	<98	356	NA	NA
NBG-XRF035	1 - 1.5	12/10/09	no	<98	422	NA	NA
		Shalllow Area	Samples (Base o	f Debris Layer	s)		
NBG-XRF021	2 - 2.5	12/10/09	no	<117	327	NA	NA
NBG-XRF023	3 - 3.5	12/09/09	no	147	43	23.2	59.4 J
NBG-XRF026	2 - 2.5	12/10/09	no	<83	461	NA	NA
		Deep Area S	amples (4 ft Dee	p Excavation)			
NBG-XRF016	4 - 4.5	12/09/09	no	<147	29	NA	NA
NBG-XRF024	4 - 4.5	12/09/09	no	<149	24	NA	NA
NBG-XRF025	4 - 4.5	12/09/09	no	<114	<11	22.2	66.7
		•	•				

Screening Criteria	Chromium (mg/kg)	Lead (mg/kg)
Facility-Wide Background ¹	65.3	26.8
Remedial Action Level	1,620	3,000

Notes:

NA - Not detected.

^{1.} From Facility-Wide Background Study Report. (IT 2001)

^{*} The depth of excavation was increased at NBG-XRF021, NBG-XRF023, and NBG-XRF026 to remove the debris and soil containing lead at concentrations above the 3,000 mg/kg RAL.

Table 3-3: Waste Disposal Summary, Northern Burning Ground New River Unit, Radford Army Ammunition Plant, Radford, Virginia

Manifort #	Facility Receipt	Facility Receipt		Load Weight
Manifest #	Date	ID	Disposal Company/Site	(tons)
004173234JJK	12/9/2009	1180367	Environmental Quality Company / Wayne Disposal, Inc.	23.77
004173235JJK	12/9/2009	1180368	Environmental Quality Company / Wayne Disposal, Inc.	25.27
004173237JJK	12/9/2009	1180366	Environmental Quality Company / Wayne Disposal, Inc.	20.71
004173249JJK	12/9/2009	1180365	Environmental Quality Company / Wayne Disposal, Inc.	26.23
004173236JJK	12/11/2010	1180399	Environmental Quality Company / Wayne Disposal, Inc.	17.14
004173238JJK	12/11/2009	1180391	Environmental Quality Company / Wayne Disposal, Inc.	23.88
004173239JJK	12/11/2009	1180408	Environmental Quality Company / Wayne Disposal, Inc.	24.63
004173240JJK	12/11/2009	1180402	Environmental Quality Company / Wayne Disposal, Inc.	23.09
004173241JJK	12/11/2009	1180404	Environmental Quality Company / Wayne Disposal, Inc.	25.52
004173242JJK	12/11/2009	1180397	Environmental Quality Company / Wayne Disposal, Inc.	23.70
004173243JJK	12/11/2009	1180424	Environmental Quality Company / Wayne Disposal, Inc.	21.81
004173244JJK	12/11/2009	1180394	Environmental Quality Company / Wayne Disposal, Inc.	22.31
004173245JJK	12/11/2009	1180398	Environmental Quality Company / Wayne Disposal, Inc.	19.61
004173246JJK	12/11/2009	1180395	Environmental Quality Company / Wayne Disposal, Inc.	23.58
004173247JJK	12/11/2009	1180400	Environmental Quality Company / Wayne Disposal, Inc.	26.85
004173248JJK	12/11/2009	1180425	Environmental Quality Company / Wayne Disposal, Inc.	36.00
			TOTAL (tons)	384.10

Table 3-4: Summary of Detected Analytes in Common Backfill and Top-Soil Samples

Northern Burning Ground

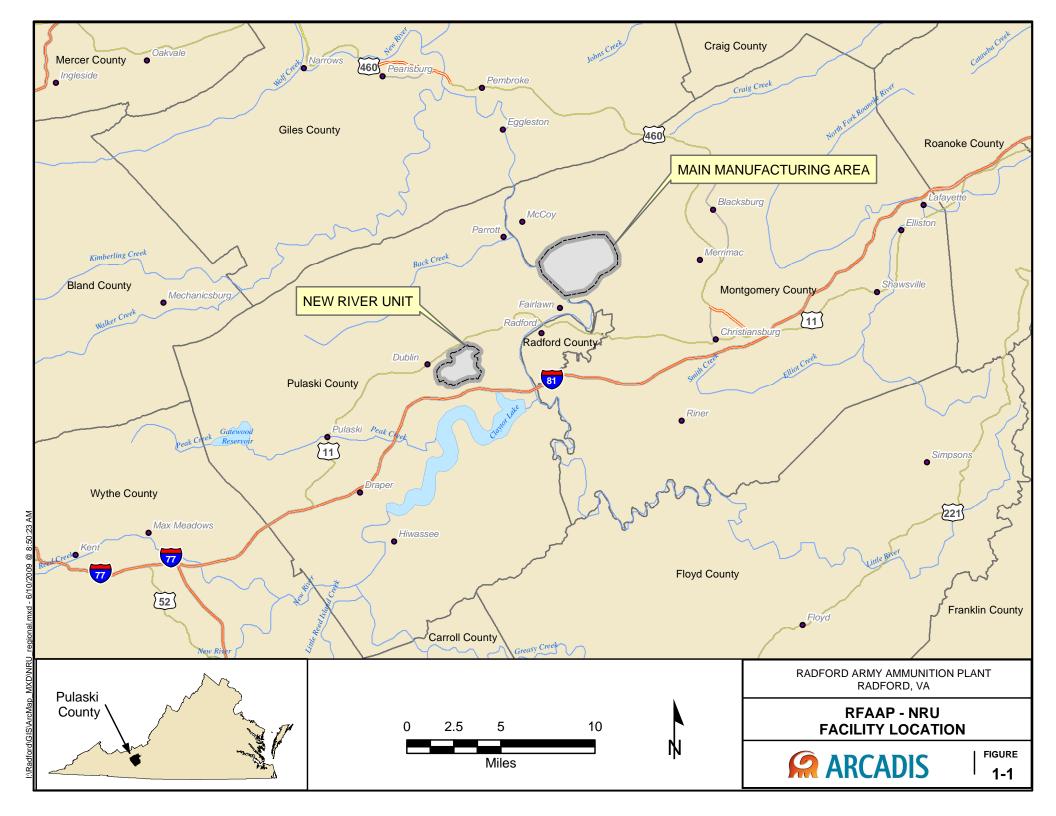
New River Unit, Radford Army Ammunition Plant, Radford, Virginia

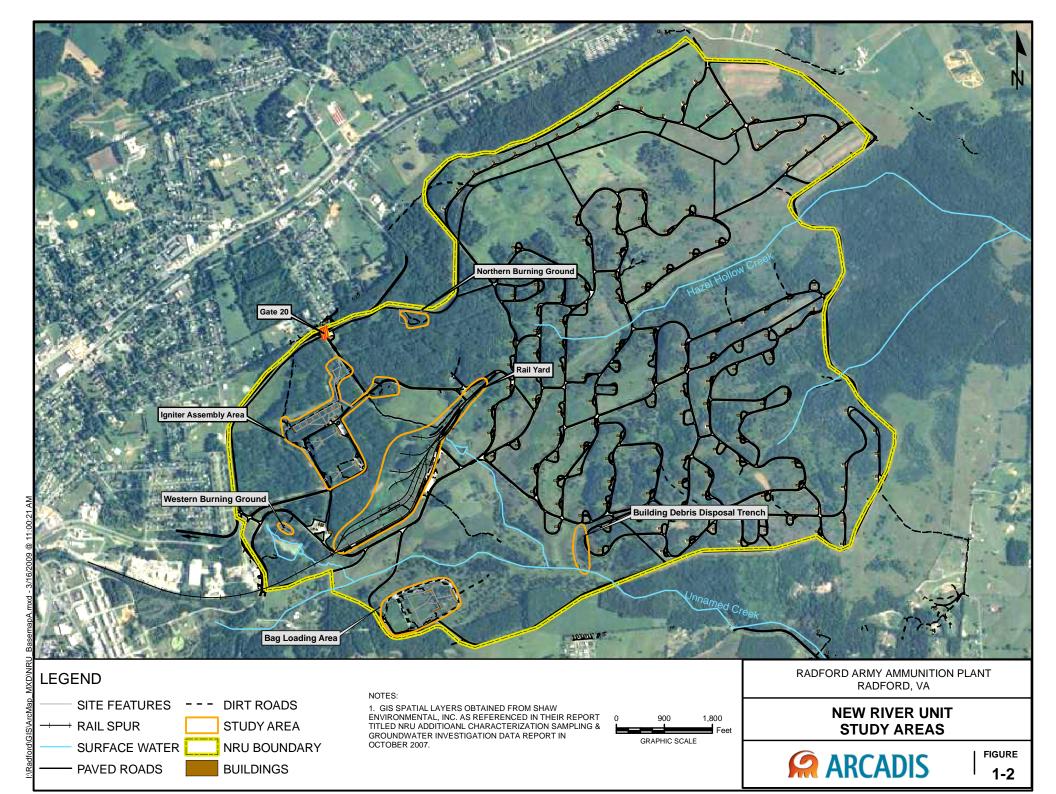
	Regional		NBG-Backfill	NBG-Topsoil
	Screening Level	Facility-Wide Background	Soil	Soil
Analyte	(Residential) ¹	Value ²	11/24/2009	11/24/2009
Volatile and Semivolatile		unds (mg/kg)		
Dibenzofuran	17,000 (a)		ND	0.141
Methylene chloride	11		0.00158	0.00209
1-Methylnaphthalene	22		2.69	2.22
2-Methylnaphthalene	310		3.14	2.93
Naphthalene	3.6		0.613	0.479
Phenanthrene	17,000 (a)		1.07	0.765
Pyrene	1,700		0.212	0.179
Pesticides (mg/kg)				
alpha-BHC	0.077		ND	0.000376
beta-BHC	0.27		ND	0.000677
gamma-BHC	0.52		ND	0.000413
Heptachlor epoxide	0.053		ND	0.000593
Herbicides (mg/kg)				
Dicamba	1,800		ND	0.0212
Dinoseb	61		ND	0.0233
Metals (mg/kg)				
Mercury	5.6	0.13	0.0629	0.025
Aluminum	77,000	40,041	34,500	13,200
Antimony	31		ND	ND
Arsenic	0.39	15.8	7.99	12.2
Barium	15,000	209	50.3	82.8
Beryllium	160	1.02	1.21	1.22
Cadmium	70	0.69	ND	ND
Calcium	NA (b)		6,030	1,580
Chromium	280 (c)	65.3	33	30.8
Cobalt	23	72.3	14.1	38.1
Copper	3,100	53.5	17.7	17.4
Iron	55,000	50,962	32,600	53,400
Lead	400	26.8	17	37.6
Magnesium	NA (b)		10,600	1,640
Manganese	1,800	2,543	343	2,030
Nickel	1,500	62.8	22.2	11.1
Potassium	NA (b)		3,370	1,140
Selenium	390		ND	ND
Silver	390		ND	ND
Sodium	NA (b)		ND	ND
Thallium	5.1	2.11	ND	ND
Vanadium	390	108	56.7	104
Zinc	23,000	202	43.5	65.6

Notes:

- 1. From December 2009 RSL Table (USEPA 2009)
- 2. From Facility-Wide Background Study Report. (IT 2001) Hydrocarbon.
- (b) No screening level is available (NA) as this is considered to be an essential nutrient. ND Not detected.
- (c) total chromium is not included in the December 2009 RSL Table; therefore, value obtained from July 2009 Table.

Figures







GROUNDWATER LOCATIONS

PAVED ROADS

DIRT ROADS

===== DRAINAGE DITCH

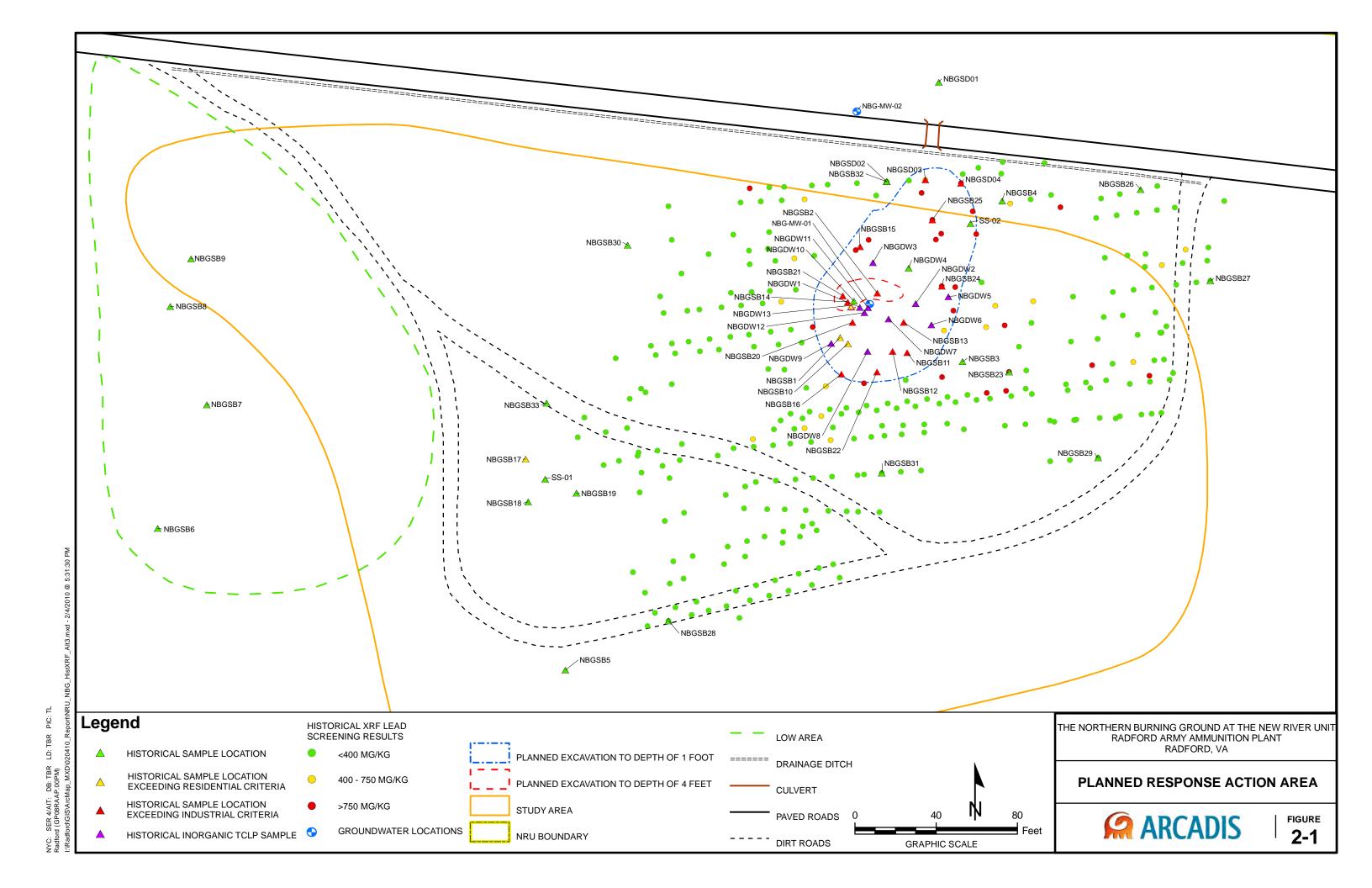
CULVERT

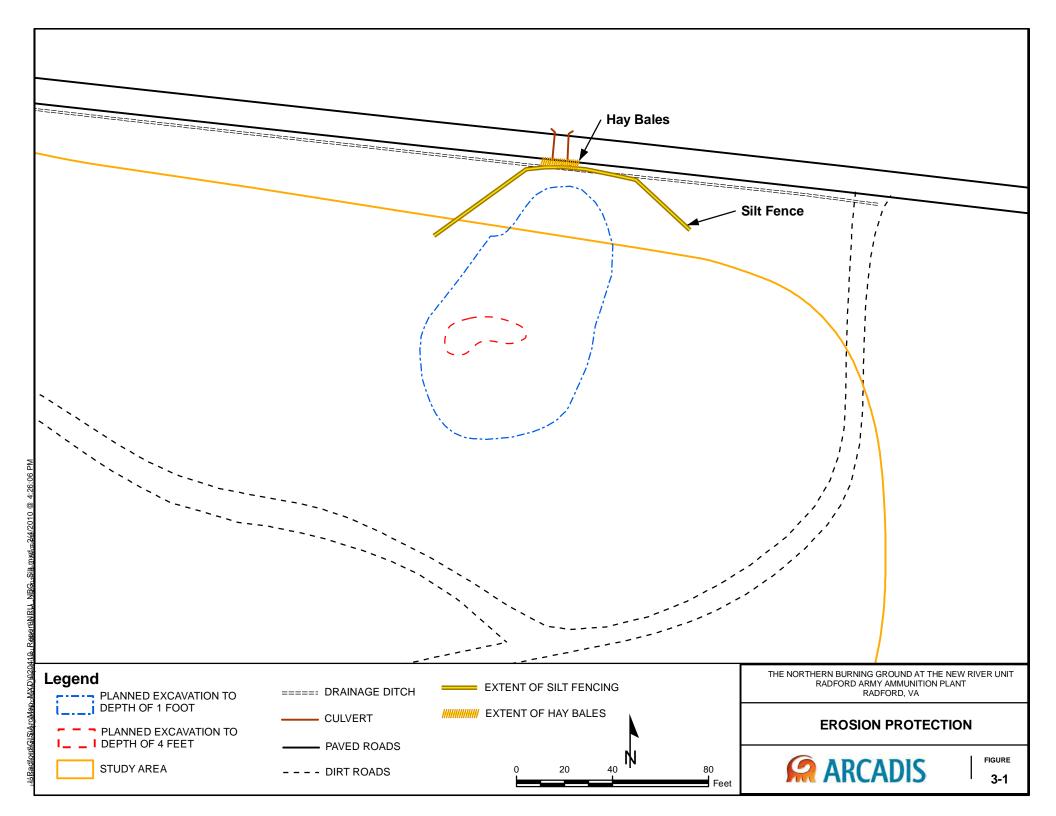
NRU BOUNDARY

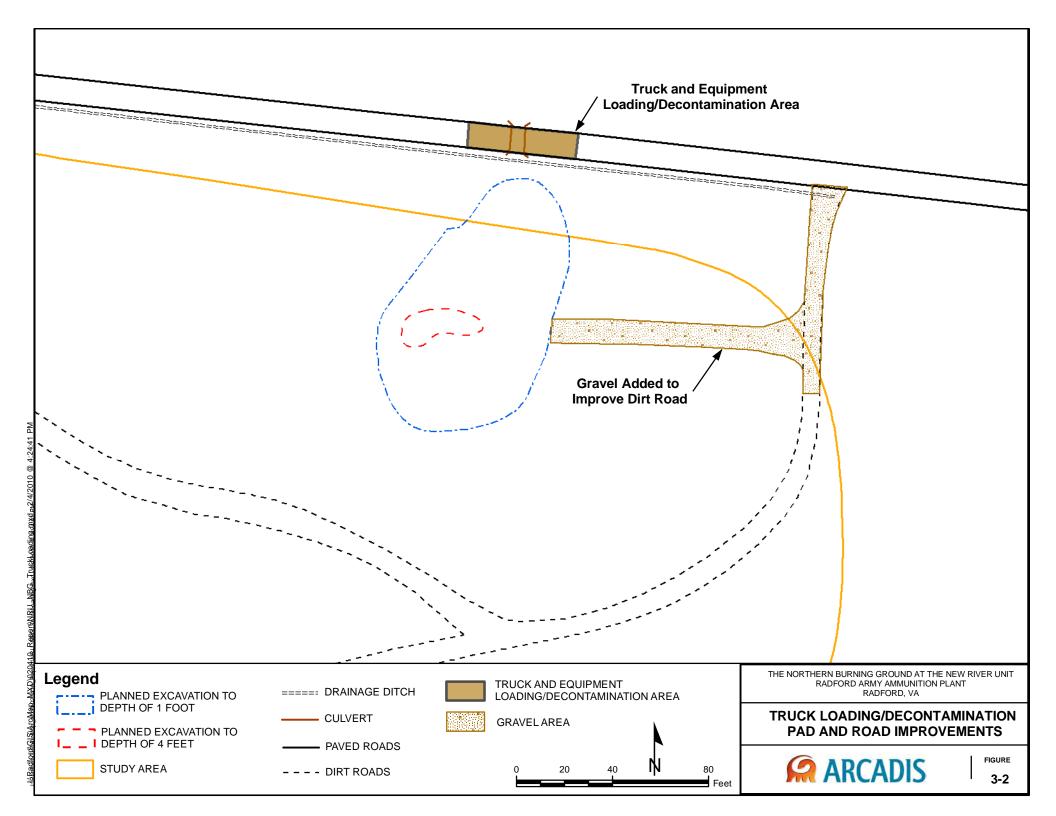
NORTHERN BURNING GROUND SITE LAYOUT

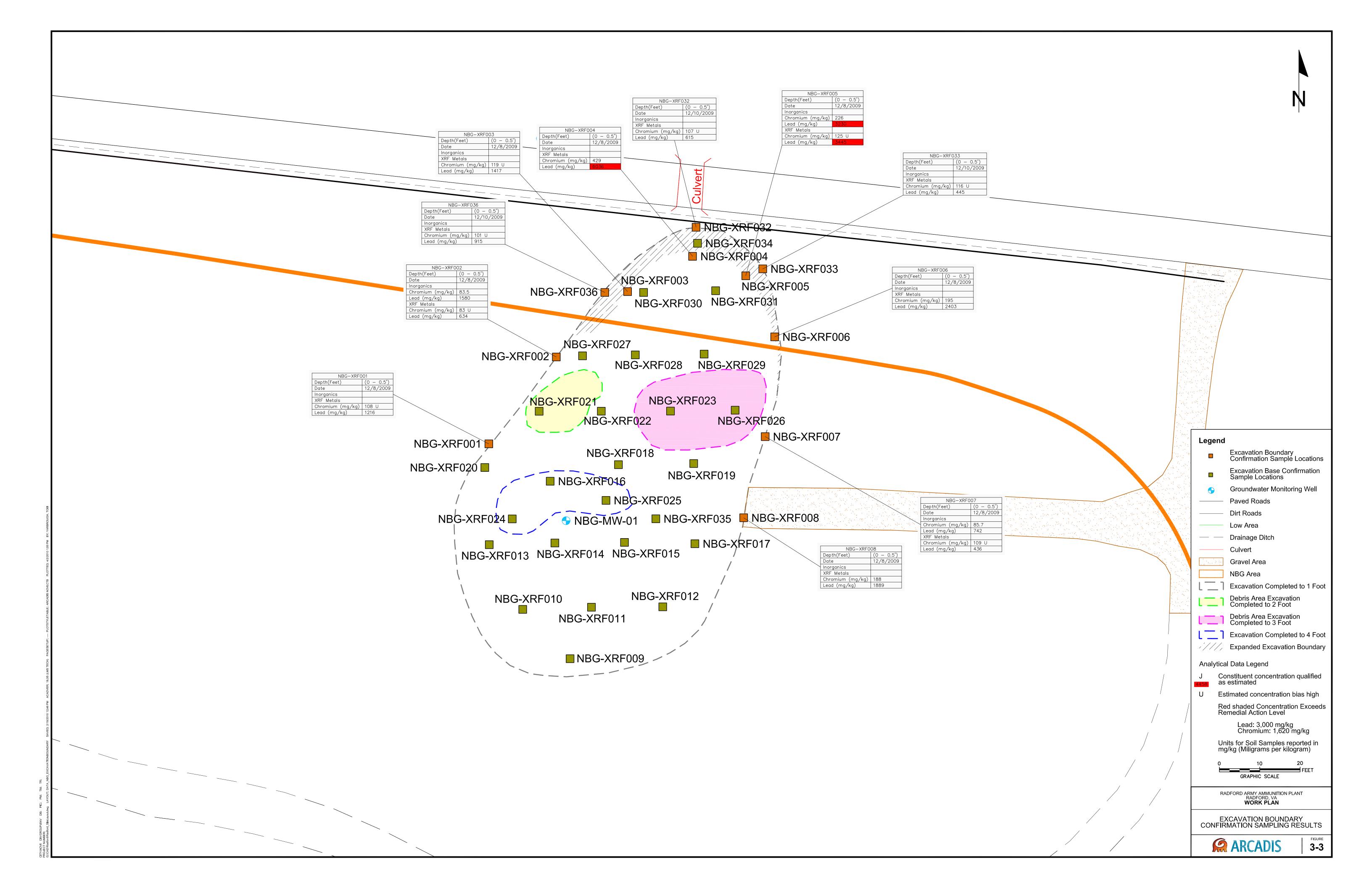
ARCADIS

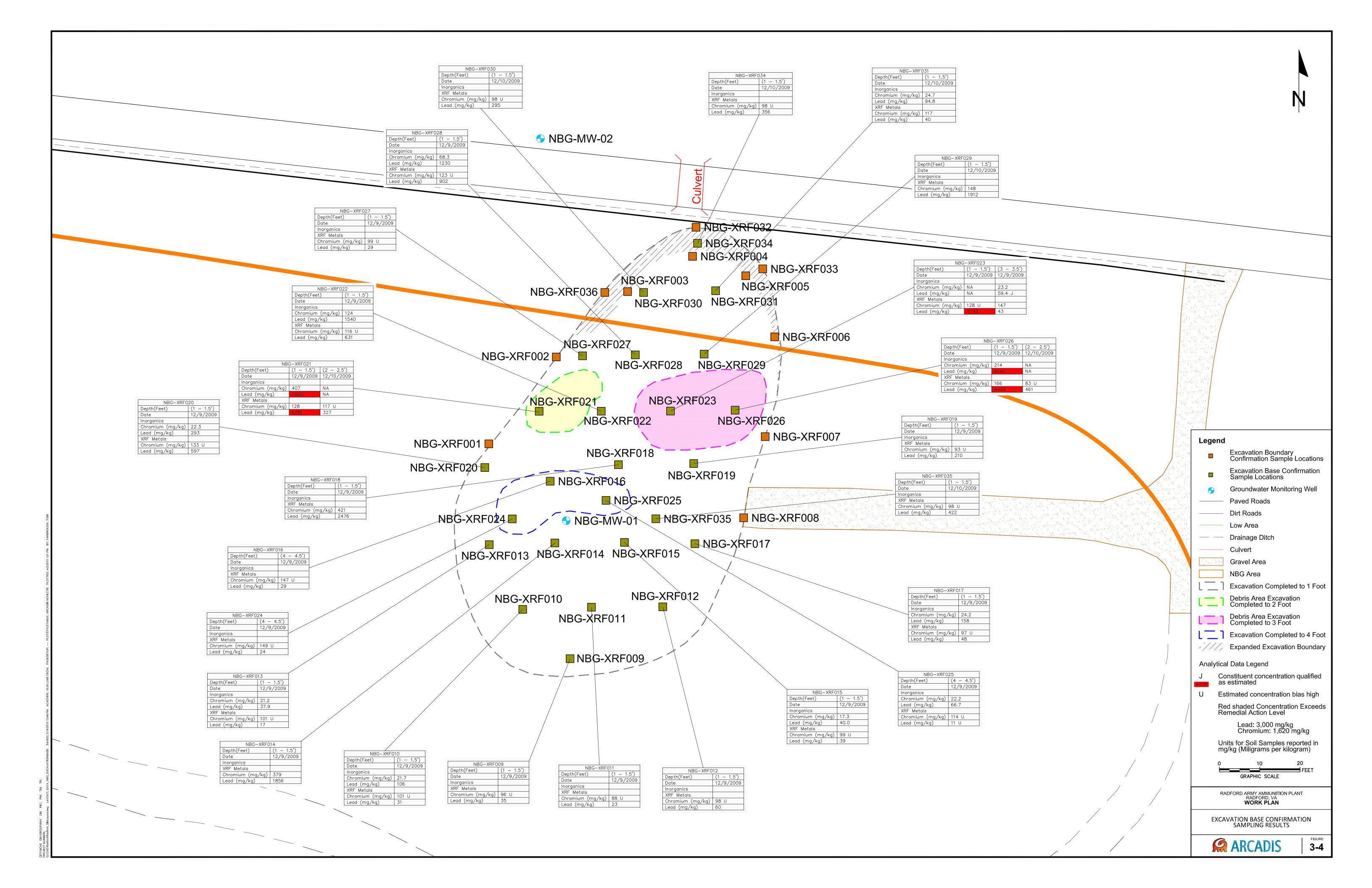
GRAPHIC SCALE











Appendix A

Laboratory Analytical Reports from Confirmation Sampling

INORGANIC CASE NARRATIVE

Arcadis SDG# Radford Work Order# 0912138 December, 2009

Empirical Laboratories ID	Client ID
0912138-01	NBG-XRF002(0-0.5)
0912138-02	NBG-XRF005(0-0.5)
0912138-03	NBG-XRF007(0-0.5)
0912138-04	NBG-XRF010(1-1.5)
0912138-05	NBG-XRF013(1-1.5)
0912138-06	NBG-XRF015(1-1.5)
0912138-07	NBG-XRF017(1-1.5)
0912138-08	NBG-XRF020(1-1.5)
0912138-09	NBG-XRF021(1-1.5)
0912138-10	NBG-XRF022(1-1.5)
0912138-11	NBG-XRF025(4-4.5)
0912138-12	NBG-XRF023B(3-3.5)
0912138-13	NBG-XRF026(1-1.5)
0912138-14	NBG-XRF028(1-1.5)
0912138-15	NBG-XRF031(1-1.5)
0912138-16	NBG-XRFDUP001(3-3.5)

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Betty De Ville Inorganic Lab Manager

Methods:

The samples were digested ICAP metals using USEPA SW846 method 3050B and analyzed by 6010B. Note: The "U" flag on the forms indicates that the analyte is reported down to the MDL. The "J" flag indicates that the analyte result is between the laboratory MDL and the laboratory RL.

Specific Comments:

All analyses performed by the Inorganic section were completed meeting satisfactorily the corresponding specifications for Quality Control.

0912138

Empirical Laboratories, LLC

Project Manager: Janice Shilling Client: Arcadis (A285) ARC Radford Project Number: Project: Radford Army Ammunition Plant Invoice To: Report To: Arcadis (A285) Arcadis (A285) Joyce Williams Jace'que Powell 640 Plaza Drive Suite 130 2929 Briarpark Dr., Suite 300 Highlands Ranch, CO 80129 Houston, TX 77042 Phone: (720) 344-3764 Phone: (281) 497-6900 Fax: (000) 000-0000 Fax: (000) 000-0000 01/07/2010 16:00 (15 day TAT) Date Due: Date Received: 12/12/2009 08:45 Received By: William Schwab Date Logged In: 12/14/2009 11:27 William Schwab Logged In By: Samples Received at: 2.1°C Yes Custody Seals No Received On Ice Containers Intact Yes COC/Labels Agree Preservation Confin Yes

Analysis	Due	TAT	Expires	Comments
0912138-01 NBG-XRF002(0-0.:	5) [Solid] Sampled	12/08/2009	9 11:00 Eastern	
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/15/2009 10:00	
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/06/2010 10:00	Chk Version
0912138-02 NBG-XRF005(0-0.:	5) [Solid] Sampled	12/08/2009	9 11:05 Eastern	
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/15/2009 10:05	
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/06/2010 10:05	Chk Version
	5) [Solid] Sampled	12/08/2009	9 11:10 Eastern	
0912138-03 NBG-XRF007(0-0.3	12/30/2009 14:00	10	12/15/2009 10:10	
WC_PERCENT_SOLIDS_2540B			06/06/2010 10:10	Chk Version
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	00/00/2010 10.10	Clik Version
0912138-04 NBG-XRF010(1-1.:	5) [Solid] Sampled	12/09/2009	9 14:10 Eastern	
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:10	Chk Version
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:10	
0912138-05 NBG-XRF013(1-1.:	5) [Solid] Sampled	12/09/2009	9 14:15 Eastern	
	12/30/2009 14:00	10	06/07/2010 13:15	Chk Version
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	12/16/2009 13:15	
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/10/2009 13.13	
0912138-06 NBG-XRF015(1-1.5	5) [Solid] Sampled	12/09/2009	9 14:20 Eastern	
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:20	Chk Version
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:20	

Printed: 1/6/2010 2:35:23PM

WORK ORDER

0912138

Empirical Laboratories, LLC

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Project Manager: **Project Number:**

Janice Shilling ARC_Radford Printed: 1/6/2010 2:35:23PM

Project: Radiord Army Ammuni	tion a lant						
Analysis	Due	TAT	Expires	Comments			
0912138-07 NBG-XRF017(1-1.5) [Solid] Sampled	12/09/2009	9 14:25 Eastern				
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:25				
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:25	Chk Version			
0912138-08 NBG-XRF020(1-1.5) [Solid] Sampled	12/09/200	9 14:30 Eastern				
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:30	Chk Version			
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:30				
0912138-09 NBG-XRF021(1-1.5) [Solid] Sampled	12/09/200	9 14:35 Eastern				
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:35				
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:35	Chk Version			
0912138-10 NBG-XRF022(1-1.5							
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:40				
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:40	Chk Version			
0912138-11 NBG-XRF025(4-4.5) [Solid] Sampled 12/09/2009 14:45 Eastern							
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10					
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:45	Chk Version			
0912138-12 NBG-XRF023B(3-3.	5) [Solid] Sample	ed 12/09/20	09 14:50 Eastern				
WC PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:50				
MET ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:50	Chk Version			
0912138-13 NBG-XRF026(1-1.5) [Solid] Sampled 12/09/2009 14:55 Eastern							
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 13:55	Chk Version			
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 13:55				
		100000	0.45 00 E - 4				
0912138-14 NBG-XRF028(1-1.5)				Chl. Varrian			
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 14:00	Chk Version			
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 14:00				
0912138-15 NBG-XRF031(1-1.5)	[Solid] Sampled	12/10/200	9 11:20 Eastern				
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/08/2010 10:20	Chk Version			
WC_PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/17/2009 10:20				
0912138-16 NBG-XRFDUP001(3	3-3.5) [Solid] San	npled 12/10	0/2009 00:00 Easter	n			
MET_ICP_LOW6010B_FULL	12/30/2009 14:00	10	06/07/2010 23:00	Chk Version			
WC PERCENT_SOLIDS_2540B	12/30/2009 14:00	10	12/16/2009 23:00				

Reviewed 124 38 Metals Summ

Date

KA ARCADIS

0912138 Metals Summ

Laboratory Task Order No./P.O. No._

CHAIN-OF-CUSTODY RECORD Page

570	n: #K-A	atio		
Date		ARCADIS	Air Organization: ARANIS Organization: FMPINICA	129-cg/(150) 1 12-bcg/(1120) 1 Solid: A = Air Organization: #RAN(S) Organization: #MON(S)
	005 005 010ica		Air Organization: Organization: Organization: Organization:	124-64/1455 1 124-64/1455 1 12-15-64/120 1 50lid; A = Air Organization:

X Common Carrier FEO EX ☐ In Person

☐ Lab Courier

□Other

SPECIFY

AG 05-12/01

4

Delivery Method:

* ARCADIS

Laboratory Task Order No./P.O. No.

CHAIN-OF-CUSTODY RECORD Page 22 of 2

	91-821-160	Total No. of Bottles/ Containers Time / ZOO Seal Intact? Time Ob: 43 Seal Intact? Time Ob: 43 Seal Intact?
ANALYSIS / METHOD / SIZE		7, 1°C Date [2, 1], 169 Date 12, 12, 164 Date 12, 12, 164 Date 12, 12, 163
DISTORACIONO CHARACION CANDO CAN		= Air Organization: HRADU Organization: EMOVICA!
8 Project Location RAPP-NRU -NCRTHERN BURNING (ROWN) 8 Laboratory Employed 8 Project Manager (1481) KAUNCUSK 8 Sampler(s)/Affiliation TASON THOTES.	NK5-XRFD, REC. (3.3.5) S	Sample Matrix: L = Liquid; \$ = \$olid; A = Relinquished by: Received by: Received by: Received by: Received by:

Delivery Method:

Kcommon Carrier FED ☐ In Person

☐ Lab Courier

AG 05-12/01

EMPIRICAL LABORATORIES COOLER RECEIPT FORM

LIMS Number: 0912	138	Nı	mber of Coolers: _	of	
Client: Arad. S		Project:	RAAR	Nu ti	100
Date/Time Received:	12/12/09		Date cooler(s)	pened: /	211214
Opened By (print): France		(signature): _	7		
	Circle response	e below as appro	priate		
1. How did the samples arrive?:	edEx	UPS	DHL	Hand	d Delivered
	EL Courier	Other:			
If applicable, enter airbill number here		3290	/		
2. Were custody seals on outside of co	ooler(s)?	•••••		Yes <	No)
How many:Seal	date:		Seal	Initials:	
3. Were custody seals unbroken and in				es No	N/A
4. Were custody papers sealed in a pla				es No	N/A
5. Were custody papers filled out prop			-	-	N/A
6. Did you sign custody papers in the			_	,	N/A
7. Was project identifiable from custoo				es No	N/A
8. If required, was enough ice present	•			es No	N/A
Type of Coolant: WET DRY	BLUE NONE		e of Samples upor	Receipt:	Z.L
	114/09				
Initial this form to acknowledge logical services and the services of the		lame): Wi	11 Schwat	(Initial):	W
10. Were all bottle lids intact and seale			x (4	es No	N/A
11. Did all bottles arrive unbroken?			ω, ₉	$\{s\}$ (s)	- N/A
12. Was all required bottle label inform			<u> </u>	es) No	N/A
13. Did all bottle labels agree with cust			_	es No	N/A
14. Were correct containers used for the				es No	N/A
15. Were preservative levels correct in				es No	N/A)
16. Was residual chlorine present in any				es No	N/A
17. Was sufficient amount of sample se				es No	N/A
17. Was sufficient amount of sample se18. Was headspace present in any includes				es No	N/A)
If Non-Conformance issues were presen	i, list by sample in	r Merte	م) د	`AP#·	
T 11, WW WWW.pv	1016	COLLUNC	ر کسک		
HOD-CONTORMATICE ISSUES WERE PRESENT CONTROLLED CONTROLLED AND CONTROLLED CO	140E13	3-14	10:06	اسده میدا	T/A.

NBG-XRF002(0-0.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-01

Sampled: <u>12/08/09 11:00</u>

Received:

12/12/09 08:45

% Solids: <u>67.56</u>

CAS NO.		Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	83.5	0.142	0.356	1		SW6010B	9L23001	12/28/09 21:33
7439-92-1	Lead	1580	1.07	2.13	10	D	SW6010B	9L23001	12/29/09 12:08

NBG-XRF005(0-0.5)

Laboratory: Empirical Laboratories, LLC

SDG:

0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-02

Sampled: <u>12/08/09 11:05</u>

Received:

12/12/09 08:45

% Solids: <u>82.56</u>

				,	Method	Batch	Analyzed
226	0.116	0.290	1		SW6010B	9L23001	12/28/09 21:37
3230	2.17	4.35	25	D	SW6010B	9L23001	12/29/09 12:13
						220 0.110 0.250 1	220 0.110 0.270 1

NBG-XRF007(0-0.5)

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Radford Army Ammunition Plant Project:

Matrix: Soil

Laboratory ID:

0912138-03

Sampled: <u>12/08/09 11:10</u>

12/12/09 08:45

<u>79.27</u> % Solids:

Received:

					Method	Batch	Analyzed
85.7	0.122	0.306	1		SW6010B	9L23001	12/28/09 21:42
742	0.184	0.367	2	D	SW6010B	9L23001	12/29/09 12:17
						00.7 0.122 0.000 1	03.7 0.122 0.500

NBG-XRF010(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-04

Sampled: 12/09/09 14:10

Received:

12/12/09 08:45

% Solids: <u>82.25</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	21.7	0.117	0.294	1		SW6010B	9L23001	12/28/09 21:47
7439-92-1	Lead	106	0.0881	0.176	1		SW6010B	9L23001	12/28/09 21:47

NBG-XRF013(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-05

Sampled: <u>12/09/09 14:15</u>

Received:

12/12/09 08:45

% Solids: <u>81.95</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	21.2	0.121	0.304	1		SW6010B	9L23001	12/28/09 21:51
7439-92-1	Lead	37.9	0.0911	0.182	1		SW6010B	9L23001	12/28/09 21:51

NBG-XRF015(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Laboratory ID:

Matrix: Soil

0912138-06

Sampled: <u>12/09/09 14:20</u>

Received:

12/12/09 08:45

% Solids:

<u>78.90</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	17.3	0.121	0.303	1		SW6010B	9L23001	12/28/09 21:56
7439-92-1	Lead	40.0	0.0910	0.182	1		SW6010B	9L23001	12/28/09 21:56

NBG-XRF017(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG:

0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-07

Sampled: 12/09/09 14:25

Received:

12/12/09 08:45

% Solids: <u>81.69</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	24.2	0.122	0.305	1		SW6010B	9L23002	12/28/09 22:47
7439-92-1	Lead	158	0.0914	0.183	1		SW6010B	9L23002	12/28/09 22:47

NBG-XRF020(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-08

Sampled: <u>12/09/09 14:30</u>

Received:

12/12/09 08:45

% Solids:

88.20

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	22.3	0.112	0.281	1		SW6010B	9L23002	12/28/09 22:52
7439-92-1	Lead	293	0.168	0.337	2	D .	SW6010B	9L23002	12/29/09 12:21

NBG-XRF021(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-09

Sampled: <u>12/09/09 14:35</u>

Received:

12/12/09 08:45

% Solids: <u>78.88</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	407	0.124	0.309	1		SW6010B	9L23002	12/28/09 22:57
7439-92-1	Lead	5920	2.32	4.64	25	D	SW6010B	9L23002	12/29/09 12:26

NBG-XRF022(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-10

Sampled: 12/09/09 14:40

Received:

12/12/09 08:45

% Solids: <u>80.45</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	124	0.123	0.308	1		SW6010B	9L23002	12/28/09 23:01
7439-92-1	Lead	1540	0.923	1.85	10	D	SW6010B	9L23002	12/29/09 12:31

NBG-XRF025(4-4.5)

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-11

Sampled: <u>12/09/09 14:45</u>

Received:

12/12/09 08:45

% Solids:

80.87

Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
Chromium	22.2	0.117	0.293	1		SW6010B	9L23002	12/28/09 23:06
Lead	66.7	0.0879	0.176	1		SW6010B	9L23002	12/28/09 23:06
	Chromium	Analyte (mg/Kg dry) Chromium 22.2	Chromium 22.2 0.117	Analyte (mg/Kg dry) MDL RL Chromium 22.2 0.117 0.293	Analyte (mg/Kg dry) MDL RL Factor Chromium 22.2 0.117 0.293 1	Analyte (mg/Kg dry) MDL RL Factor Q Chromium 22.2 0.117 0.293 1	Analyte (mg/Kg dry) MDL RL Factor Q Method Chromium 22.2 0.117 0.293 1 SW6010B	Analyte (mg/Kg dry) MDL RL Factor Q Method Batch Chromium 22.2 0.117 0.293 1 SW6010B 9L23002

NBG-XRF023B(3-3.5)

Laboratory: Empirical Laboratories, LLC

0912138 SDG:

Client: Arcadis (A285)

Radford Army Ammunition Plant Project:

Matrix: Soil

Laboratory ID:

0912138-12

Sampled: <u>12/09/09 14:50</u>

Received:

12/12/09 08:45

% Solids:

<u>88.63</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	23.2	0.111	0.278	1		SW6010B	9L23002	12/28/09 23:11
7439-92-1	Lead	59.4	0.0834	0.167	1		SW6010B	9L23002	12/28/09 23:11

NBG-XRF026(1-1.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-13

Sampled: 12/09/09 14:55

Received:

12/12/09 08:45

% Solids: <u>78.82</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	214	0.123	0.306	1		SW6010B	9L23002	12/28/09 23:15
7439-92-1	Lead	4040	0.919	1.84	10	D	SW6010B	9L23002	12/29/09 12:35

NBG-XRF028(1-1.5)

Laboratory: Empirical Laboratories, LLC

0912138 SDG:

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0912138-14

Sampled: <u>12/09/09 15:00</u>

Received:

12/12/09 08:45

% Solids: <u>81.56</u>

CAS NO.		Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	68.3	0.121	0.302	1		SW6010B	9L23002	12/28/09 23:20
7439-92-1	Lead	1230	0.453	0.906	5	D	SW6010B	9L23002	12/29/09 12:39

NBG-XRF031(1-1.5)

Laboratory: Empirical Laboratories, LLC

0912138 SDG:

Client: Arcadis (A285)

Radford Army Ammunition Plant Project:

Matrix: Soil

Laboratory ID:

0912138-15

Sampled: <u>12/10/09 11:20</u>

Received:

12/12/09 08:45

% Solids: <u>77.61</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3	Chromium	24.7	0.124	0.310	1		SW6010B	9L23002	12/28/09 23:25
7439-92-1	Lead	94.8	0.0929	0.186	1		SW6010B	9L23002	12/28/09 23:25

NBG-XRFDUP001(3-3.5)

Laboratory: Empirical Laboratories, LLC

SDG: 0912138

Arcadis (A285) Client:

Project:

Matrix: Soil

Laboratory ID:

Radford Army Ammunition Plant

0912138-16

Sampled: <u>12/10/09 00:00</u>

Received:

12/12/09 08:45

% Solids:

<u>82.96</u>

CAS NO. An		Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7440-47-3 Ch	ıromium	21.3	0.121	0.303	1		SW6010B	9L23002	12/28/09 23:30
7439-92-1 Lea	ad	362	0.182	0.363	2	D	SW6010B	9L23002	12/29/09 12:44

INITIAL AND CONTINUING CALIBRATION CHECK SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: <u>9364001</u>

Sequence: <u>9L36401</u>

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L36401-ICV1	Chromium	1000	982.0	98.2	ug/L	+/- 10.00%
	Lead	1000	997.5	99.8	ug/L	+/- 10.00%
9L36401-CCV1	Chromium	1000	1000	100	ug/L	+/- 10.00%
	Lead	1000	1014	101	ug/L	+/- 10.00%
9L36401-CCV4	Chromium	1000	984.0	98.4	ug/L	+/- 10.00%
	Lead	1000	969.5	97.0	ug/L	+/- 10.00%
9L36401-CCV5	Chromium	1000	990.2	99.0	ug/L	+/- 10.00%
	Lead	1000	983.1	98.3	ug/L	+/- 10.00%
9L36401-CCV6	Chromium	1000	985.8	98.6	ug/L	+/- 10.00%
	Lead	1000	972.1	97.2	ug/L	+/- 10.00%
9L36401-CCV7	Chromium	1000	1012	101	ug/L	+/- 10.00%
	Lead	1000	977.7	97.8	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: 9364004

Sequence: 9L36407

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L36407-ICV1	Lead	1000	986.0	98.6	ug/L	+/- 10.00%
9L36407-CCV1	Lead	1000	980.7	98.1	ug/L	+/- 10.00%
9L36407-CCV2	Lead	1000	990.0	99.0	ug/L	+/- 10.00%

Metals in Water by ICP-AES - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L36401											
Instrument RL Check			Prepared	& Anal	yzed: 12	/28/2009)				
Chromium	4.875			ug/L	5.000		97.5	80-120			
Lead	2.842			ug/L	3.000		94.7	80-120			
Batch 9L36407											
Instrument RL Check			Prepared	& Anal	yzed: 12	/29/2009)				
Lead	2.820			ug/L	3.000		94.0	80-120			

BLANKS SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Instrument ID: ME-ICP

Project: Radford Army Ammunition Plant

Sequence: <u>9L36401</u>

Calibration: <u>9364001</u>

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L36401-ICB1	Chromium	-0.09331	2.00	5.00	ug/L	U	SW6010B
	Lead	-0.9421	1.50	3.00	ug/L	U	SW6010B
9L36401-CCB1	Chromium	0.163	2.00	5.00	ug/L	U	SW6010B
	Lead	0.408	1.50	3.00	ug/L	U	SW6010B
9L36401-CCB4	Chromium	-0.124	2.00	5.00	ug/L	U	SW6010B
	Lead	-0.244	1.50	3.00	ug/L	U	SW6010B
9L23001-BLK1	Chromium	0.0452	0.100	0.250	mg/Kg wet	U	SW6010B
	Lead	0.0224	0.0750	0.150	mg/Kg wet	U	SW6010B
9L36401-CCB5	Chromium	0.105	2.00	5.00	ug/L	U	SW6010B
	Lead	-0.632	1.50	3.00	ug/L	U	SW6010B
9L36401-CCB6	Chromium	0.0799	2.00	5.00	ug/L	U	SW6010B
	Lead	0.879	1.50	3.00	ug/L	U	SW6010B
9L23002-BLK1	Chromium	0.0415	0.100	0.250	mg/Kg wet	U	SW6010B
	Lead	-0.0175	0.0750	0.150	mg/Kg wet	U	SW6010B
9L36401-CCB7	Chromium	-0.0760	2.00	5.00	ug/L	U	SW6010B
	Lead	0.957	1.50	3.00	ug/L	U	SW6010B

BLANKS SW6010B

Laboratory: Empirical Laboratories, LLC

Client: Arcadis (A285)

Instrument ID: ME-ICP

Sequence: <u>9L36407</u>

SDG: <u>0912138</u>

Project: Radford Army Ammunition Plant

Calibration: 9364004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L36407-ICB1	Lead	-0.09231	1.50	3.00	ug/L	U	SW6010B
9L36407-CCB1	Lead	0.0269	1.50	3.00	ug/L	U	SW6010B
9L36407-CCB2	Lead	0.345	1.50	3.00	ug/L	U	SW6010B

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: <u>9364001</u>

Sequence: <u>9L36401</u>

Lab Sample ID	Analyte	True	Found	%R	Units
9L36401-IFA1	Chromium		-2.22		ug/L
	Lead		2.10		ug/L
9L36401-IFB1	Chromium	500.0	430.31	86.1	ug/L
	Lead	50.00	47.55	95.1	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0912138</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: 9364004

Sequence: 9L36407

Lab Sample ID	Analyte	True	Found	%R	Units
9L36407-IFA1	Lead		1.66		ug/L
9L36407-IFB1	Lead	50.00	46.12	92.2	ug/L

LCS / LCS DUPLICATE RECOVERY SW6010B

Laboratory:

Empirical Laboratories, LLC

SDG:

0912138

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L23001

Laboratory ID:

9L23001-BS1

Preparation:

MET 3050B

Initial/Final:

<u>2 g / 100 mL</u>

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Chromium	10.00	10.72	107	80 - 120
Lead	12.50	12.60	101	80 - 120

LCS / LCS DUPLICATE RECOVERY SW6010B

Laboratory:

Empirical Laboratories, LLC

SDG:

0912138

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Solid</u>

Batch:

9L23002

Laboratory ID:

9L23002-BS1

Preparation:

MET 3050B

Initial/Final:

2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Chromium	10.00	10.86	109	80 - 120
Lead	12.50	12.65	101	80 - 120

Appendix B

Site Photographs



Photo 1 – Silt Fence installed in northwest portion of the work area prior to excavation.



Photo 2 – Gravel added to dirt road on east side of work area.



Photo 3 – View of plastic liner being installed in dump trailer prior to loading.



Photo 4 – Debris/ash from historic burning operations encountered during excavation activities.



Photo 5 – Southern portion of excavation footprint after target depth of 1-ft bgs achieved.



Photo 6 – Central portion of site where target excavation depth was 4-ft bgs.



Photo 7 – View of excavation area during backfill activities.



Photo 8 – View of work area after grass seed and straw were placed.

Appendix C

Waste Disposal Manifests, Weigh Tickets, and Certificates of Disposal invoice: 40176541

Receipt 03-01 1180367

Manifest 004173234JJK

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Wayne Disposal, Inc. 49350 North I-94 Service Drive, Belleville, Michigan 48111

Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702

Receipt ID: 1180367 EQ Account #: 5247

Manifest / BOL: 004173234JJK Transporter: US BULK

Date: 12/09/2009 Time In: 8:08 AM

Time Out: 12:17 PM

Line	Description			Qty. Unit	_
	Generator				
1 - A	L092016WDI - New I	River Storage Depot- N	lorthern Burn Ground Soil	23.770 TONS	
	VAR000012559 NE	W RIVER STORAGE E	DEPOT		
	Gross: 80,680	Tare: 33,140	Net: 47,540		

Authorized Signature:

3003254

Page 3 of 7



CERTIFICATE OF DISPOSAL

FAX NUMBER: ADDRESS: PHONE NUMBER:

1-800-593-5329

1-800-592-5489

Michigan Disposal Waste Treatment Plant (சவரம் சன்றனர்கள்)

49350 N. I-94 Service Drive Belleville, Michigan 48111

FACILITY NAME

(Please theck one)

d Wayne Disposal, Inc.

Form # REC-FM-013-BEL

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

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8055/08

COG 004173234JJK

Receipt 03-01 1180367

involce: 40176541

This certificate is to verify the wastes specified on Manifest # 004173234JJK

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either; 1) Burial or 2) Processed as specified in 40 CFR at sea.

Invoice: 40176541

Receipt 03-01 1180368

Manifest 004173235JJK

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Wayne Disposal, Inc. 49350 North I-94 Service Drive, Belleville, Michigan 48111

Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 **NEWARK, DE 19702**

Receipt ID: 1180368 EQ Account #: 5247 Manifest / BOL: 004173235JJK

Transporter: US BULK Date: 12/09/2009 Time In: 8:00 AM

Time Out: 12:26 PM

Line	Description					Qty. Unit	
	Generator						
1 - A	L092016WDJ - Nev	River Stora	ge Depot- N	orthern Burn C	Ground Soil	25.270 TONS	
	VAR000012559 N	EW RIVER S	STORAGE D	ЕРОТ			
	Gross: 83,380	Tare:	32,840	Net: 50),540		

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7 to 9 egsq



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CERTIFICATE OF DISPOSAL

FACILITY NAME: FAX NUMBER: PHONE NUMBER: ADDRESS:

49350 N. I-94 Service Drive

Belleville, Michigan 48111

Michigan Disposal Waste Treatment Plant
 (FPA 1.D. 4 MIN9972431)

(Hayne Disposal, Inc. (Hayns # MIDM#809663)

1-800-592-5489

1-800-593-5329

Authorized Signature:,

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

The electronic reason of this document is the controlled rection. Each poor is responsible for easylving that any document deleg used is the current version.

8/25/68

Receipt 03-01 1180368

Invoice: 40176541

This certificate is to verify the wastes specified on Manifest # 00417323555

have been properly disposed of in accordance with all local, state and federal regulations.

COG 004173235JJK

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

invoice: 40177363

Receipt 03-01 1180399

Manifest 004173236JJK

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Wayne Disposal, Inc. 49350 North i-94 Service Drive, Belleville, Michigan 48111

Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702

Tare: 33,040

Gross: 67,320

Receipt ID: 1180399 EQ Account #: 5247

Manifest / BOL: 004173236JJK Transporter: US BULK

Date: 12/11/2009
Time In: 7:23 AM
Time Out: 8:58 AM

Line Description
Generator

1 - A L092016WDI - New River Storage Depot- Northern Burn Ground Soil

VAR000012559 NEW RIVER STORAGE DEPOT

Net: 34,280

FAX NUMBER:

Authorized Signature:

PHONE NUMBER:

CERTIFICATE OF DISPOSAL

ADDRESS:

FACILITY NAME:

(Picuse chrek une)

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERV CE DRIVE BELLEVILLE MICHIGAN 48111

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8/25/08

COQ 00411353917K

Receipt 03-01 1180399

Invoice: 40177363

Invoice: 40176541

Receipt 03-01 1180366

Manifest 004173237JJK

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Wayne Disposal, Inc. 49350 North I-94 Service Drive, Belleville, Michigan 48111

Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180366 EQ Account #: 5247

Manifest / BOL: 004173237JJK Transporter: US BULK Date: 12/09/2009

Time In: 11:29 AM
Time Out: 12:30 PM

 Line
 Description Generator
 Qty. Unit

 1 - A
 £092016WDi - New River Storage Depot- Northern Burn Ground Soil
 20.710 TONS

 VAR000012559 NEW RIVER STORAGE DEPOT Gross: 75,600 Tare: 34,180 Net: 41,420
 41,420
 THE ENVIRONMENTAL QUALITY COMPANY 49350 N.1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

FORM REC-ENDITABEL

CERTIFICATE OF DISPOSAL

Belleville, Michigan 48111 49350 N. I-94 Service Drive (Picase check one)

ADDRESS:

FACILITY NAME:

Michigan Disposal Waste Treatment Plant (EPAID. # MIX00714831)

Wayne Disposal, Inc.

FAX NUMBER:

1-800-593-5329

PHONE NUMBER:

1-800-592-5489

Authorized Signature:

80/22/08

The electratic version of the document is the coefficient version. Each user is responsible for easing that any document being used is the curran version,

Page 2 of 7

This certificate is to verify the wastes specified on Manifest #_

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

Invoice: 40177647

Receipt 03-01 1180391

Capitol Environmental Va

Manifest 004173238JJK

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Wayne Disposal, Inc. 49350 North I-94 Service Drive, Belleville, Michigan 48111

Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702

Gross: 79,240

Tare: 31,480

Receipt ID: 1180391 EQ Account #: 5247

Manifest / BOL: 004173238JJK Transporter: US BULK

Date: 12/11/2009 Time In: 6:51 AM Time Out: 8:36 AM

Line Description
Generator

1 - A L092016WDI - New River Storage Depot- Northern Burn Ground Soil

VAR000012559 NEW RIVER STORAGE DEPOT

Net: 47,760

FAX NUMBER:

1-800-593-5329

1-800-592-5489

form#REC-PA-013-851



CERTIFICATE OF DISPOSAL

PHONE NUMBER ADDRESS: (Please theck one)

49350 N. I-94 Service Drive Belleville, Michigan 48111

FACILITY NAME:

☐ Michigan Disposal Waste Treatment Plant она тр. т михиотънки

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825/08

The abstrait version of this document is the controlled version. Each user is responsible for ensuring that any document being used is the current version.

COG 0041333871K

Authorized Signature:

Receipt 03-01 1180391

Invoice: 40177647

This certificate is to verify the wastes specified on Manifest # 004/73238 SX

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either; 1) Burial or 2) Processed as specified in 40 CFR et sea.

Invoice: 40177363

Receipt 03-01 1180408

Manifest 004173239JJK

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Wayne Disposal, Inc. 49350 North I-94 Service Drive, Belleville, Michigan 48111

Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180408 EQ Account #: 5247

Manifest / BOL: 004173239JJK Transporter: US BULK

Date: 12/11/2009
Time In: 8:47 AM
Time Out: 10:02 AM

Line Description
Generator

1 - A L092016WDI - New River Storage Depot- Northern Burn Ground Soil

Qty. Unit
24.630 TONS

VAR000012559 NEW RIVER STORAGE DEPOT

Gross: 80,700 Tare: 31,440 Net: 49,260

FAX NUMBER:

Authorized Signature:

PHONE NUMBER:

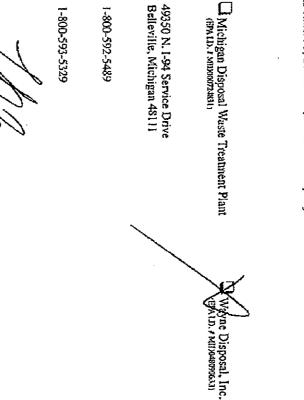
CERTIFICATE OF DISPOSAL

ADDRESS:

FACILITY NAME:

(Pleuse check one)

Form # REC-EM-913-BEL



This certificate is to verify the wastes specified on Manifest # 004173231 Tylehave been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

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COQ 004173239JJK

Receipt 03-01 1180408

Invoice: 40177363

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Receipt 03-01 1180402

Manifest 004173240JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180402 EQ Account #: 5247

Manifest / BOL: 004173240JJK Transporter: US BULK

Date: 12/11/2009 Time In: 7:38 AM Time Out: 11:26 AM

Line	Description	Qty. Unit
1 - A	Generator L092016WDI - New River Storage Depot- Northern Burn Ground Soil	23.090 TONS
2	VAR000012559 NEW RIVER STORAGE DEPOT Gross: 78,560 Tare: 32,380 Net: 46,180 DIG OUT	1.000 EACH
	VAR000012559 NEW RIVER STORAGE DEPOT	

Receipt 03-01 1180402

Cod 004173240JJK

have been properly disposed of in accordance with all local, state and federal regulations. This certificate is to verify the wastes specified on Manifest # $\Omega 4/73240$

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

FACILITY NAME: (Please check our)

ADDRESS:

EKTIFICATE OF DISPOSAL

☐ Michigan Disposal Waste Treatment Plant เฮนาม.*ศมธงชระเลก

49350 N. 1-94 Service Drive

Belleville, Michigan 48111

1-800-592-5489

PHONE NUMBER:

1-800-593-5329

FAX NUMBER:

Authorized Signature:

Term F. REC-FAR-013-8EL

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. [-94 SERVICE DRIVE BELLEVILLE MICHIGAN 4811]

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Receipt 03-01 1180404

Manifest 004173241JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180404 EQ Account #: 5247

Manifest / BOL: 004173241JJK
Transporter: US BULK

Date: 12/11/2009
Time in: 7:46 AM
Time Out: 5:41 PM

Line Description
Generator
Qty. Unit

1 - A L092016WDI - New River Storage Depot- Northern Burn Ground Soil

25.520 TONS

VAR000012559 NEW RIVER STORAGE DEPOT

Gross: 82,880 Tare: 31,840 Net: 51,040

10.020 , 0...

பி Michigan Disposal Waste Treatment Plant சந்தில் சகாணையல்

49350 N. I-94 Service Drive Belleville, Michigan 48111

1-800-593-5329

1-800-592-5489

Wayne Disposal, Inc.

COG 004173241JJK

Receipt 03-01 1180404

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Receipt 03-01 1180397

Manifest 004173242JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180397 EQ Account #: 5247

Manifest / BOL: 004173242JJK Transporter: US BULK

Date: 12/11/2009 Time In: 7:17 AM Time Out: 10:59 AM

Line	Description	Qty. Unit
	Generator	
1 - A	L092016WDI - New River Storage Depot- Northern Burn Ground Soil	23.700 TONS
	VAR000012559 NEW RIVER STORAGE DEPOT	
	Gross: 82,020 Tare: 34,620 Net: 47,400	
2	DIGOUT	1.000 EACH
	VAR000012559 NEW RIVER STORAGE DEPOT	



CERTIFICATE OF DISPOSAL

ADDRESS:

Form # REC-PM-013-BEL

۲

THE ENVIRONMENTAL QUALITY COMPANY 4935 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

Authorized Signature:

FAX NUMBER:

PHONE NUMBER:

1-800-592-5489

49350 N. J-94 Service Drive Belleville, Mickigan 48111

Michigan Disposal Waste Treatment Plant

FACILITY NAME:

(Please theck one)

Weyne Disposal, Inc.

1-800-593-532

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Page 4 of 17

3014594

004173242 John

This certificate is to verify the wastes spec.fied on Manifest #_

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Buxial or 2) Processed as specified in 40 CFR et sea.

Receipt 03-01 1180424

Manifest 004173243JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180424 EQ Account #: 5247

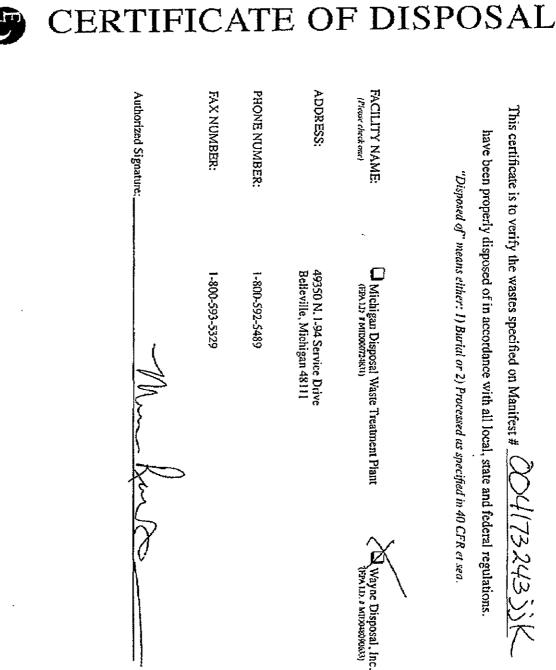
Manifest / BOL: 004173243JJK Transporter: US BULK

Date: 12/11/2009 Time In: 11:29 AM Time Out: 6:23 PM

ine	Description	Qty. Unit
A	L092016WDI - New River Storage Depot- Northern Burn Ground Soil	21.810 TONS
	VAR000012559 NEW RIVER STORAGE DEPOT	
	Gross: 76 600 Tare: 32,980 Net: 43,620	

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

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8/25/08

COQ 004173243JJK

Receipt 03-01 1180424

Involce: 40177363

Receipt 03-01 1180394

Manifest 004173244JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180394 EQ Account #: 5247 Manifest / BOL: 004173244JJK

Transporter: US BULK Date: 12/11/2009 Time In: 6:59 AM

Time In: 6:59 AM Time Out: 8:44 AM

Line	Description Generator			Qty. Unit
1 - A	L092016WDI - New F	River Storage Depot- N	orthern Burn Ground Soil	22.310 TONS
	VAR000012559 NE\	N RIVER STORAGE (DEPOT	
	Gross: 78,160	Tare: 33,540	Net: 44,620	

Authorized Signature:

Eum#REC-FH-013-BEL

Page 2 of 17

FAX NUMBER:

1-800-593-5329

PHONE NUMBER:

1-800-592-5489

CERTIFICATE OF DISPOSAL

Belleville, Michigan 48111 49350 N. I-94 Service Drive

ADDRESS: (Pleuse check one)

FACILITY NAME:

Michigan Disposal Waste Treatment Plant (EPA)13.7 MIDMOTZANI)

Wayne Disposal, Inc.

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

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8/25/08

COQ 004173244JJK

6499777048

Receipt 03-01 1180394

Invoice: 40177363

This certificate is to verify the wastes specified on Manifest #

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Buried or 2) Processed as specified in 40 CFR at sea.

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702

Receipt ID: 1180398 EQ Account #: 5247

Manifest / BOL: 004173245JJK Transporter: US BULK

Date: 12/11/2009 Time in: 7:19 AM Time Out: 8:55 AM

Line Description

Generator

I - A L092D16WDI - New River Storage Depot- Northern Burn Ground Soil

19.610 TONS

Qty. Unit

VAR000012559 NEW RIVER STORAGE DEPOT

Gross: 74,060 Tare: 34,840 Net: 39,220

CERTIFICATE OF DISPOSAL

ADDRESS:

This certificate is

This certificate is to verify the wastes specified on Manifest # 111954211K

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

FACILITY NAME:

☐ Michigan Disposal Waste Treatment Plant (FTA1D # МПЖООТ148;)

Wayne Disposal, Inc.

FAX NUMBER:

PHONE NUMBER:

1-800-592-5489

49350 N. I-94 Service Drive Belleville, Michigan 48111

Authorized Signature:

Form#REC-FM-013-BEL

Receipt 03-01 1180395

Manifest 004173246JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180395 EQ Account #: 5247

Manifest / BOL: 004173246JJK Transporter: US BULK

> Date: 12/11/2009 Time In: 7:04 AM Time Out: 8:51 AM

Line	Description Generator	Qty. Unit
1 - A	Ł092016WDI - New River Storage Depot- Northern Burn Ground Soil	23.580 TONS
	VAR000012559 NEW RIVER STORAGE DEPOT	
	Gross: 78,500 Tare: 31,340 Net: 47,160	The second secon

<u>Form # REC.FM-013-BEI.</u>

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

The electrade version of the document is the controlled version. Each user is responsible for crisining that any document being used is the cument version.

CERTIFICATE OF DISPOSAL

Belleville, Michigan 48111 49350 N. J-94 Service Drive

ADDRESS:

FACILITY NAME: (Flowe clicck one)

Michigan Disposal Waste Treatment Plant (1974 LD. 1 MIDXXII)

Wayne Disposal, Inc.

825/08

COQ 004173246JJK

Authorized Signature:

FAX NUMBER:

1-800-593-5329

PHONE NUMBER:

1-800-592-5489

Receipt 03-01 1180395

Involce: 40177363

This certificate is to verify the wastes specified on Manifest #_

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: I) Burial or 2) Processed as specified in 40 CFR et sea.

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Receipt 03-01 1180400

Manifest 004173247JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIODLE AVE, SUITE 205

NEWARK, DE 19702

Receipt ID: 1180400 EQ Account #: 5247

Manifest / BOL: 004173247JJK Transporter: US BULK

Date: 12/11/2009 Time In: 7:31 AM Time Out: 9:07 AM

Qty. Unit Description Line

Generator L092016WDI - New River Storage Depot- Northern Burn Ground Soil

26.850 TONS

VAR000012559 NEW RIVER STORAGE DEPOT

Gross: 87,020

Tare: 33,320

Net: 53,700

FAX NUMBER:

1-800-593-5329

PHONE NUMBER:

1-800-592-5489

Authorized Signature:

ADDRESS:

Belleville. Michigan 48111 49350 N. I-94 Service Drive FACILITY NAME:

(Pleuse check one)

(Michigan Disposal Waste Treatment Plant (छेन।त. इंगाफळलच्या)

☐ Wayne Disposal, Inc. (FISTD: / MIXIAMMAR)

COQ 004173247JK

Receipt 03-01 1180400

invoice: 40177363

This certificate is to verify the wastes specified on Manifest # 004173247 35K

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: I) Burial or 2) Processed as specified in 40 CFR et sea.

Fact & REC-PARTITION

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THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

825/08

Receipt 03-01 1180425

Manifest 004173248JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Receipt ID: 1180425 EQ Account #: 5247

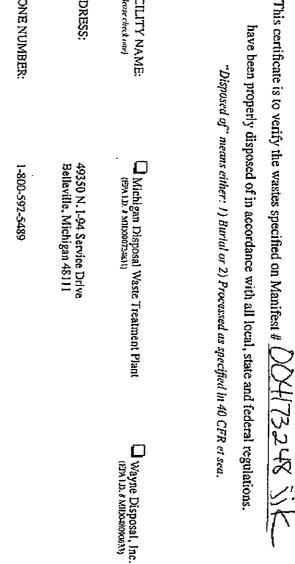
Manifest / BOL: 004173248JJK Transporter: US BULK

Date: 12/11/2009 Time In: 11:31 AM Time Out: 5:56 PM

Line	Description	Qty. Unit
1 - A	Generator L092016WDi - New River Storage Depot- Northern Burn Ground Soil	36,000 TONS
	VAR000012559 NEW RIVER STORAGE DEPOT Gross: 104 760	

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

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CERTIFICATE OF DISPOSAL Authorized Signature: FAX NUMBER: PHONE NUMBER: ADDRESS: FACILITY NAME: (Please check one) 1-800-593-5329

COG 004173248JJK

Receipt 03-01 1180425

TASTSTOP :acioval

Receipt 03-01 1180365

Manifest 004173249JJK

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Receipt

CAPITOL ENVIRONMENTAL - ROANOKE VA 200 BIDDLE AVE, SUITE 205 NEWARK, DE 19702 Recelpt ID: 1180365 EQ Account #: 5247 Manifest / BOL: 004173249JJK

Transporter: US BULK Date: 12/09/2009 Time In: 7:46 AM

Time Out: 12:14 PM

Line	Description Generator			Qty. Unit		
1 - A	L092016WDI - New River	Storage Depot- No	orthern Burn Ground Soil	26.230 TONS		
	VAR000012559 NEW RI	VER STORAGE D	EP OT			
	Gross: 84,960	Tare: 32,500	Net: 52,460			

FAX NUMBER:

1-800-593-5329

1-800-592-5489

CERTIFICATE OF DISPOSAL

Folm # BEC-FM-013-BEL THE ENVIRONMENTAL QUALITY COMPANY 49350 N. 1-94 SERVICE DRIVE BEILEVILLE MICHIGAN 48111

PHONE NUMBER: ADDRESS:

49350 N. 1-94 Service Drive Belleville, Michigan 48111

FACILITY NAME: (Please check one)

☐ Michigan Disposal Waste Treatment Plant பில் பி. சன்னைவைப

TWayne Disposal, Inc.

COQ 00411324911K

Authorized Signature:

Receipt 03-01 1180365

Invoice: 40177213

This certificate is to verify the wastes specified on Manifest # 004173249-572

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

8/25/08

The electronic version of this document is the combotled version. Each user is responsible for ensuring that any document being used is the current version

Capitol Environmental Va

Appendix D

Laboratory Analytical Reports for Backfill Material

INORGANIC CASE NARRATIVE

Arcadis SDG# Radford Work Order# 0911230 November, 2009

Empirical Laboratories ID	Client ID
0911230-01	NBG-Backfill
0911230-02	NBG-Topsoil

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Betty Deville Inorganic Lab Manager

Methods:

The samples were digested ICAP metals using USEPA SW846 method 3050B and analyzed by 6010B. Mercury was digested and analyzed by 7471A. Note: The "U" flag on the forms indicates that the analyte is reported down to the MDL. The "J" flag indicates that the analyte result is between the laboratory MDL and the laboratory RL.

Specific Comments:

All analyses performed by the Inorganic section were completed meeting satisfactorily the corresponding specifications for Quality Control with the following exceptions:

I. ICAP Metals

- A. Matrix Spike and Matrix Spike Duplicate (MS/MSD) Specification Limits (80 to 120%)
 - 1. The matrix spike and the matrix spike duplicate were out of the specification limits for sodium at 123 and 122% for sample NBG-Topsoil. The post digestion spike recovery was at 108%. All associated data are flagged with an "N" on the final report.

NOTE: The sample matrix was spiked for all TAL metals but iron in the sample was over the linear range and required a dilution. Since iron has IECs for all other metals in the TAL list that are not reflected on the matrix spike form, and all other metals were reported from a diluted sample, those spike recoveries are not shown on the matrix spike page.

B. Laboratory Control Sample (LCS) Specification Limits (80 to 120%) 1. The laboratory control sample was out of the specification limits for barium at 121%. This impacted both samples in the SDG.

0911230 Metals Summ 2

WORK ORDER

0911230

Empirical Laboratories, LLC

Project Manager: Janice Shilling Client: Arcadis (A285) ARC_Radford Project: Radford Army Ammunition Plant **Project Number:**

Invoice To: Report To: Arcadis (A285) Arcadis (A285) Joyce Williams Jace'que Powell

640 Plaza Drive Suite 130 2929 Briarpark Dr., Suite 300 Highlands Ranch, CO 80129 Houston, TX 77042 Phone: (720) 344-3764 Phone: (281) 497-6900

Fax: (000) 000-0000 Fax: (000) 000-0000

12/11/2009 16:00 (10 day TAT) Date Due:

Date Received: 11/25/2009 08:15 William Schwab Received By: Date Logged In: 11/25/2009 17:07 William Schwab Logged In By:

1.7°C Samples Received at

Received On Ice Yes **Custody Seals** No

Containers Intact Yes COC/Labels Agree Yes Preservation Confin Yes

Analysis	Due	TAT	Expires	Comments						
0911230-01 NBG-Backfill [Solid] Sampled 11/24/2009 15:30 Eastern										
MET_TAL_GRP_S_LOW	12/08/2009 14:00	10	05/23/2010 14:30							
SGC_HERB_8151A	12/08/2009 14:00	10	12/08/2009 14:30							
SGC_PEST8081A_3546	12/08/2009 14:00	10	12/08/2009 14:30							
SMS_BNA_8270C_3546_REG	12/08/2009 14:00	10	12/08/2009 14:30							
VOC_8260B_REG	12/08/2009 14:00	10	12/08/2009 14:30	ENCORES						
WC_PERCENT_SOLIDS_2540B	12/08/2009 14:00	10	12/01/2009 14:30							
0911230-02 NBG-Topsoil [Solid	0911230-02 NBG-Topsoil [Solid] Sampled 11/24/2009 14:30 Eastern									
MET_ICP_6010C_FULL	01/01/1980 00:00		11/24/2009 13:30	Added for SequenceQC in: 9L33812						
MET_ICP_6010B_FULL_DIS	01/01/1980 00:00		11/24/2009 13:30	Added for SequenceQC in: 9L33812						
WC_PERCENT_SOLIDS_2540B	12/08/2009 14:00	10	12/01/2009 13:30							
MET_ICP_LOW6010B_FULL	01/01/1980 00:00		11/24/2009 13:30	Added for SequenceQC in: 9L33812						
MET_ICP_LOW6010B_FULL_DIS	01/01/1980 00:00		11/24/2009 13:30	Added for SequenceQC in: 9L33812						
MET_TAL_GRP_S_LOW	12/08/2009 14:00	10	05/23/2010 13:30							
SGC_HERB_8151A	12/08/2009 14:00	10	12/08/2009 13:30							
SGC_PEST8081A_3546	12/08/2009 14:00	10	12/08/2009 13:30							
SMS_BNA_8270C_3546_REG	12/08/2009 14:00	10	12/08/2009 13:30							
VOC_8260B_REG	12/08/2009 14:00	10	12/08/2009 13:30	ENCORES						

Printed: 12/11/2009 9:39:23AM

WORK ORDER

0911230

Empirical Laboratories, LLC

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Project Manager:

Janice Shilling

Printed: 12/11/2009 9:39:23AM

Project Number:

ARC_Radford

Analysis groups included in this work order

MET TAL GRP S LOW

MET 7471A MERCURY MET ICP LOW6010B T.

A ARCADIS

Laboratory Task Order No./P.O. No.

CHAIN-OF-CUSTODY RECORD Page _

Yes No N/A Yes No N/A Total Seal Intact? Seal Intact? Total No. of Bottles/ Containers 10-0821160 Remarks Time 08:15 Time 25x5 Time -Time . 50 124 100 ANALYSIS / METHOD / SIZE Date ___ Date_ Date_ Date_ Organization: AIKAOD Organization: . £ . Organization: Organization: Lab ID Project Number/Name GROBRAAP 4126 KG N.B.C. A = AirDate/Time Sampled 0(H)/8042 ०ऽऽ/क्रमः॥ Toloranoly S__ \$olid; Project Location RADFORD - NRU, VA Sampler(s)/Affiliation CHRIS KALINGVISE Laboratory Empirical (Apportments) Matrix Project Manager <u>Drawe cuisβਓਕ</u> L = Liguid; Special Instructions/Remarks: Sample ID/Location Relinquished by: _ Relinquished by: NBG - BACKFILL NBG-TASSIC Sample Matrix: Received by: Received by:

SPECIFY

Other

☐ Lab Courier

□ In Person

Delivery Method:

EMPIRICAL LABORATORIES COOLER RECEIPT FORM

LIMS Number: 0911	130	Number	of Coolers:	of
Client: Accadis		Project:	Radford	λ
Date/Time Received: 11/25/09	08:15	Date cool	er(s) opened	Λ 11/25/09
Opened By (print): WILLIAM S	CHWAB	(signature):	and	γ
	Circle response b	elow as appropriate		
1. How did the samples arrive?:	<u>FedEx</u>	UPS	DHL	Hand Delivered
	EL Courier	Other:	4010	
If applicable, enter airbill number here:	Avadration		0120	>
2. Were custody seals on outside of co	oler(s)?		Ye	s No
How many: Seal	date:		Seal Initial	s:
3. Were custody seals unbroken and in	tact at the date and t	time of arrival?	Yes	No (N/A)
4. Were custody papers sealed in a plas	stic bag included in	the sample cooler?		No N/A
5. Were custody papers filled out propo	erly (ink, signed, etc	:.)?		No N/A
6. Did you sign custody papers in the a	ppropriate place for	acceptance?	(Yes)	No N/A
7. Was project identifiable from custod	y papers?	• • • • • • • • • • • • • • • • • • • •	(es)	No N/A
8. If required, was enough ice present i	n the cooler(s)?		Yes	No N/A
Type of Coolant: (WET) DRY	BLUE NONE	Temperature of S	amples upon Rece	ipt: 1-7"
Dates samples were logged-in:	11/25/09		, ,	
9. Initial this form to acknowledge logic	n of sample(s): (Nar	ne): Will Co	hurd (1	nitial):
10. Were all bottle lids intact and sealed	d tightly?		(Yes)	No N/A
11. Did all bottles arrive unbroken?	•••••••••••		(Yes)	No N/A
12. Was all required bottle label inform	ation complete?		(Yes)	No N/A
13. Did all bottle labels agree with custo	ody papers?		Yes	No N/A
14. Were correct containers used for the	analyses indicated	?	(Yes)	No N/A
15. Were preservative levels correct in a	all applicable sample	e containers?	Yes	No N/A
16. Was residual chlorine present in any	applicable sample	containers?	Yes	No N/A
17. Was sufficient amount of sample ser	nt for the analyses re	equired?		No N/A
18. Was headspace present in any include	led VOA vials?		Yes	No (N/A)
If Non-Conformance issues were present	, list by sample ID:		***************************************	***************************************
			CAR#:	

0911230 Metals Summ 6

ANALYSIS DATA SHEET

NBG-Backfill

Laboratory: Empirical Laboratories, LLC

SDG:

0911230

Client: Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID:

0911230-01

Sampled: <u>11/24/09 15:30</u>

Received:

11/25/09 08:15

% Solids: 83.65

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0629	0.0167	0.0423	1		SW7471A	9L02009	12/03/09 15:54
7429-90-5	Aluminum	34500	5.89	23.6	2	D	SW6010B	9L02007	12/04/09 10:57
7440-36-0	Antimony		0.589	1.77	2	U	SW6010B	9L02007	12/04/09 10:57
7440-38-2	Arsenic	7.99	0.353	0.589	2	D	SW6010B	9L02007	12/04/09 10:57
7440-39-3	Barium	50.3	0.589	4.71	2	D	SW6010B	9L02007	12/04/09 10:57
7440-41-7	Beryllium	1.21	0.0589	0.294	1		SW6010B	9L02007	12/03/09 15:13
7440-43-9	Cadmium		0.118	0.589	2	U	SW6010B	9L02007	12/04/09 10:57
7440-70-2	Calcium	6030	58.9	294	1		SW6010B	9L02007	12/03/09 15:13
7440-47-3	Chromium	33.0	0.236	0.589	2	D	SW6010B	9L02007	12/04/09 10:57
7440-48-4	Cobalt	14.1	0.589	1.47	2	D	SW6010B	9L02007	12/04/09 10:57
7440-50-8	Copper	17.7	0.589	1.18	2	D	SW6010B	9L02007	12/04/09 10:57
7439-89-6	Iron	32600	3.53	11.8	2	D	SW6010B	9L02007	12/04/09 10:57
7439-92-1	Lead	17.0	0.177	0.353	2	D	SW6010B	9L02007	12/04/09 10:57
7439-95-4	Magnesium	10600	118	589	2	D	SW6010B	9L02007	12/04/09 10:57
7439-96-5	Manganese	343	0.353	1.77	2	D	SW6010B	9L02007	12/04/09 10:57
7440-02-0	Nickel	22.2	0.589	1.18	2	D	SW6010B	9L02007	12/04/09 10:57
7440-09-7	Potassium	3370	58.9	294	1		SW6010B	9L02007	12/03/09 15:13
7782-49-2	Selenium		0.353	0.589	2	U	SW6010B	9L02007	12/04/09 10:57
7440-22-4	Silver		0.353	0.589	2	U	SW6010B	9L02007	12/04/09 10:57
7440-23-5	Sodium		58.9	294	1	UN	SW6010B	9L02007	12/03/09 15:13
7440-28-0	Thallium		0.353	0.942	2	U	SW6010B	9L02007	12/04/09 10:57
7440-62-2	Vanadium	56.7	0.589	1.47	2	D	SW6010B	9L02007	12/04/09 10:57
7440-66-6	Zinc	43.5	0.589	2.36	2	D	SW6010B	9L02007	12/04/09 10:57

ANALYSIS DATA SHEET

NBG-Topsoil

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Radford Army Ammunition Plant

Matrix: Soil

Laboratory ID: <u>0911230-02</u>

Project:

Sampled: 11/24/09 14:30

Received: 11/25/09 08:15

% Solids: <u>78.24</u>

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0250	0.0131	0.0333	1	J	SW7471A	9L02009	12/03/09 15:55
7429-90-5	Aluminum	13200	15.7	62.7	5	D	SW6010B	9L02007	12/04/09 11:02
7440-36-0	Antimony		1.57	4.70	5	U	SW6010B	9L02007	12/04/09 11:02
7440-38-2	Arsenic	12.2	0.940	1.57	5	D	SW6010B	9L02007	12/04/09 11:02
7440-39-3	Barium	82.8	1.57	12.5	5	D	SW6010B	9L02007	12/04/09 11:02
7440-41-7	Beryllium	1.22	0.0627	0.313	1		SW6010B	9L02007	12/03/09 15:18
7440-43-9	Cadmium		0.313	1.57	5	U	SW6010B	9L02007	12/04/09 11:02
7440-70-2	Calcium	1580	62.7	313	1		SW6010B	9L02007	12/03/09 15:18
7440-47-3	Chromium	30.8	0.627	1.57	5	D	SW6010B	9L02007	12/04/09 11:02
7440-48-4	Cobalt	38.1	1.57	3.92	5	D	SW6010B	9L02007	12/04/09 11:02
7440-50-8	Copper	17.4	1.57	3.13	5	D	SW6010B	9L02007	12/04/09 11:02
7439-89-6	Iron	53400	9.40	31.3	5	D	SW6010B	9L02007	12/04/09 11:02
7439-92-1	Lead	37.6	0.470	0.940	5	D	SW6010B	9L02007	12/04/09 11:02
7439-95-4	Magnesium	1600	313	1570	5	D	SW6010B	9L02007	12/04/09 11:02
7439-96-5	Manganese	2030	0.940	4.70	5	D	SW6010B	9L02007	12/04/09 11:02
7440-02-0	Nickel	11.1	1.57	3.13	5	D	SW6010B	9L02007	12/04/09 11:02
7440-09-7	Potassium	1140	62.7	313	1		SW6010B	9L02007	12/03/09 15:18
7782-49-2	Selenium		0.940	1.57	5	U	SW6010B	9L02007	12/04/09 11:02
7440-22-4	Silver		0.627	1.57	5	U	SW6010B	9L02007	12/04/09 11:02
7440-23-5	Sodium		62.7	313	1	UN	SW6010B	9L02007	12/03/09 15:18
7440-28-0	Thallium		0.940	2.51	5	U	SW6010B	9L02007	12/04/09 11:02
7440-62-2	Vanadium	104	1.57	3.92	5	D	SW6010B	9L02007	12/04/09 11:02
7440-66-6	Zinc	65.6	1.57	6.27	5	D	SW6010B	9L02007	12/04/09 11:02

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: 9338008
Sequence: 9L33812

			<u> </u>	1		
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
<u>PL33812-ICV1</u>	Aluminum	10000	10030	100	ug/L	+/- 10.00%
	Antimony	1000	1014	101	ug/L	+/- 10.00%
	Arsenic	1000	985.3	98.5	ug/L	+/- 10.00%
	Barium	1000	1073	107	ug/L	+/- 10.00%
	Beryllium	1000	1022	102	ug/L	+/- 10.00%
	Cadmium	1000	1062	106	ug/L	+/- 10.00%
	Calcium	50000	50080	100	ug/L	+/- 10.00%
	Chromium	1000	998.7	99.9	ug/L	+/- 10.00%
	Cobalt	1000	1002	100	ug/L	+/- 10.00%
****	Copper	1000	1011	101	ug/L	+/- 10.00%
	Iron	10000	10470	105	ug/L	+/- 10.00%
	Lead	1000	989.2	98.9	ug/L	+/- 10.00%
	Magnesium	50000	49860	99.7	ug/L	+/- 10.00%
	Manganese	1000	1029	103	ug/L	+/- 10.00%
	Nickel	1000	991.7	99.2	ug/L	+/- 10.00%
	Potassium	10000	10010	100	ug/L	+/- 10.00%
	Selenium	1000	1019	102	ug/L	+/- 10.00%
	Silver	500.0	503.7	101	ug/L	+/- 10.00%
	Sodium	50000	51020	102	ug/L	+/- 10.00%
	Thallium	1000	963.1	96.3	ug/L	+/- 10.00%
	Vanadium	1000	980.5	98.0	ug/L	+/- 10.00%
	Zinc	1000	1004	100	ug/L	+/- 10.00%
L33812-CCV1	Aluminum	10000	10070	101	ug/L	+/- 10.00%
	Antimony	1000	1038	104	ug/L	+/- 10.00%
	Arsenic	1000	1052	105	ug/L	+/- 10.00%
	Barium	1000	1068	107	ug/L	+/- 10.00%
	Beryllium	1000	1039	104	ug/L	+/- 10.00%
	Cadmium	1000	1080	108	ug/L	+/- 10.00%
	Calcium	50000	49820	99.6	ug/L	+/- 10.00%
	Chromium	1000	1006	101	ug/L	+/- 10.00%
	Cobalt	1000	1017	102	ug/L	+/- 10.00%
	Copper	1000	1026	103	ug/L	+/- 10.00%
	Iron	10000	10450	105	ug/L	+/- 10.00%
	Lead	1000	1025	103	ug/L	+/- 10.00%
	Magnesium	50000	49430	98.9	ug/L	+/- 10.00%
***************************************	Manganese	1000	1053	105	ug/L	+/- 10.00%
	Nickel	1000	1025	102	ug/L	+/- 10.00%
	Potassium	10000	10070	101	ug/L	+/- 10.00%

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: <u>9338008</u> Sequence: <u>9L33812</u>

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCV1	Selenium	1000	1046	105	ug/L	+/- 10.00%
	Silver	500.0	507.1	101	ug/L	+/- 10.00%
	Sodium	50000	50410	101	ug/L	+/- 10.00%
	Thallium	1000	1026	103	ug/L	+/- 10.00%
	Vanadium	1000	996.0	99.6	ug/L	+/- 10.00%
	Zinc	1000	1048	105	ug/L	+/- 10.00%
9L33812-CCV2	Aluminum	10000	10340	103	ug/L	+/- 10.00%
	Antimony	1000	1076	108	ug/L	+/- 10.00%
	Arsenic	1000	1082	108	ug/L	+/- 10.00%
	Barium	1000	1082	108	ug/L	+/- 10.00%
	Beryllium	1000	1047	105	ug/L	+/- 10.00%
	Cadmium	1000	1100	110	ug/L	+/- 10.00%
	Calcium	50000	48050	96.1	ug/L	+/- 10.00%
	Chromium	1000	1000	100	ug/L	+/- 10.00%
	Cobalt	1000	1035	104	ug/L	+/- 10.00%
	Copper	1000	1074	107	ug/L	+/- 10.00%
	Iron	10000	10310	103	ug/L	+/- 10.00%
	Lead	1000	1045	104	ug/L	+/- 10.00%
	Magnesium	50000	49480	99.0	ug/L	+/- 10.00%
	Manganese	1000	1057	106	ug/L	+/- 10.00%
	Nickel	1000	1046	105	ug/L	+/- 10.00%
	Potassium	10000	10660	107	ug/L	+/- 10.00%
	Selenium	1000	1088	109	ug/L	+/- 10.00%
	Silver	500.0	513.4	103	ug/L	+/- 10.00%
	Sodium	50000	52800	106	ug/L	+/- 10.00%
	Thallium	1000	1059	106	ug/L	+/- 10.00%
·	Vanadium	1000	1010	101	ug/L	+/- 10.00%
	Zinc	1000	1039	104	ug/L	+/- 10.00%
L33812-CCV3	Aluminum	10000	10280	103	ug/L	+/- 10.00%
	Antimony	1000	1056	106	ug/L	+/- 10.00%
	Arsenic	1000	1062	106	ug/L	+/- 10.00%
	Barium	1000	1066	107	ug/L	+/- 10.00%
	Beryllium	1000	1048	105	ug/L	+/- 10.00%
	Cadmium	1000	1080	108	ug/L	+/- 10.00%
	Calcium	50000	49650	99.3	ug/L	+/- 10.00%
	Chromium	1000	1028	103	ug/L	+/- 10.00%
	Cobalt	1000	1021	102	ug/L	+/- 10.00%
	Copper	1000	1044	104	ug/L	+/- 10.00%

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCV3	Iron	10000	10610	106	ug/L	+/- 10.00%
	Lead	1000	1023	102	ug/L	+/- 10.00%
	Magnesium	50000	49960	99.9	ug/L	+/- 10.00%
	Manganese	1000	1066	107	ug/L	+/- 10.00%
	Nickel	1000	1026	103	ug/L	+/- 10.00%
	Potassium	10000	10380	104	ug/L	+/- 10.00%
	Selenium	1000	1047	105	ug/L	+/- 10.00%
	Silver	500.0	514.3	103	ug/L	+/- 10.00%
	Sodium	50000	52140	104	ug/L	+/- 10.00%
	Thallium	1000	1032	103	ug/L	+/- 10.00%
	Vanadium	1000	1000	100	ug/L	+/- 10.00%
	Zinc	1000	1035	103	ug/L	+/- 10.00%
DL33812-CCVA	Aluminum	10000	9878	98.8	ug/L	+/- 10.00%
	Antimony	1000	989.9	99.0	ug/L	+/- 10.00%
	Arsenic	1000	1012	101	ug/L	+/- 10.00%
	Barium	1000	1042	104	ug/L	+/- 10.00%
	Beryllium	1000	935.1	93.5	ug/L	+/- 10.00%
	Cadmium	1000	1042	104	ug/L	+/- 10.00%
	Calcium	50000	45980	92.0	ug/L	+/- 10.00%
	Chromium	1000	932.3	93.2	ug/L	+/- 10.00%
	Cobalt	1000	967.8	96.8	ug/L	+/- 10.00%
	Copper	1000	967.0	96.7	ug/L	+/- 10.00%
	Iron	10000	9785	97.9	ug/L	+/- 10.00%
	Lead	1000	999.8	100	ug/L	+/- 10.00%
	Magnesium	50000	45300	90.6	ug/L	+/- 10.00%
	Manganese	1000	982.4	98.2	ug/L	+/- 10.00%
	Nickel	1000	985.9	98.6	ug/L	+/- 10.00%
	Potassium	10000	9981	99.8	ug/L	+/- 10.00%
	Selenium	1000	1012	101	ug/L	+/- 10.00%
	Silver	500.0	483.9	96.8	ug/L	+/- 10.00%
	Sodium	50000	47910	95.8	ug/L	+/- 10.00%
	Thallium	1000	980.2	98.0	ug/L	+/- 10.00%
	Vanadium	1000	916.7	91.7	ug/L	+/- 10.00%
	Zinc	1000	1020	102	ug/L	+/- 10.00%
L33812-CCVB	Aluminum	10000	9904	99.0	ug/L	+/- 10.00%
	Antimony	1000	1002	100	ug/L	+/- 10.00%
	Arsenic	1000	1023	102	ug/L	+/- 10.00%
	Barium	1000	1042	104	ug/L	+/- 10.00%

0911230 Metals Summ Page **31**f 4

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCVB	Beryllium	1000	969.1	96.9	ug/L	+/- 10.00%
	Cadmium	1000	1049	105	ug/L	+/- 10.00%
	Calcium	50000	46860	93.7	ug/L	+/- 10.00%
	Chromium	1000	938.5	93.9	ug/L	+/- 10.00%
	Cobalt	1000	978.4	97.8	ug/L	+/- 10.00%
	Copper	1000	984.2	98.4	ug/L	+/- 10.00%
	Iron	10000	9736	97.4	ug/L	+/- 10.00%
	Lead	1000	1002	100	ug/L	+/- 10.00%
	Magnesium	50000	45970	91.9	ug/L	+/- 10.00%
	Manganese	1000	997.0	99.7	ug/L	+/- 10.00%
	Nickel	1000	997.5	99.8	ug/L	+/- 10.00%
	Potassium	10000	9959	99.6	ug/L	+/- 10.00%
	Selenium	1000	1019	102	ug/L	+/- 10.00%
	Silver	500.0	486.0	97.2	ug/L	+/- 10.00%
	Sodium	50000	48780	97.6	ug/L	+/- 10.00%
	Thallium	1000	994.0	99.4	ug/L	+/- 10.00%
	Vanadium	1000	934.9	93.5	ug/L	+/- 10.00%
	Zinc	1000	1017	102	ug/L	+/- 10.00%

0911230 Metals Summ Page **42**f 4

SW7471A

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-FIMS

Calibration: 9338002

Sequence: 9L33802

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33802-ICV1	Mercury	4.000	4.400	110	ug/L	+/- 15.00%
9L33802-CCV1	Mercury	4.000	4.114	103	ug/L	+/- 15.00%
9L33802-CCV2	Mercury	4.000	4.110	103	ug/L	+/- 15.00%

Metals in Water by ICP-AES - Quality Control

					Spike	Source		%REC		RPD	
Analyte	Result	MDL	RL	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9L33812											
Instrument RL Check			Prepared	& Anal	yzed: 12	/03/2009)				
Barium	40.26			ug/L	40.00		101	80-120			
Manganese	15.66			ug/L	15.00		104	80-120			
Instrument RL Check			Prepared	& Anal	yzed: 12	/03/2009)				
Aluminum	209.0			ug/L	200.0		104	80-120			
Antimony	13.56			ug/L	15.00		90.4	80-120			
Arsenic	4.105			ug/L	5.000		82.1	80-120			
Beryllium	5.101			ug/L	5.000		102	80-120			
Cadmium	5.038			ug/L	5.000		101	80-120			
Calcium	5074			ug/L	5000		101	80-120			
Chromium	5.140			ug/L	5.000		103	80-120			
Cobalt	11.86			ug/L	12.50		94.9	80-120			
Copper	10.04			ug/L	10.00		100	80-120			
ron	110.4			ug/L	100.0		110	80-120			
Magnesium	4859			ug/L	5000		97.2	80-120			
Nickel	9.426			ug/L	10.00		94.3	80-120			
Potassium	4854			ug/L	5000		97.1	80-120			
Selenium	4.510			ug/L	5.000		90.2	80-120			
Silver	1.994			ug/L	2.000		99.7	80-120			
Sodium	4940			ug/L	5000		98.8	80-120			
Thallium Thallium	7.462			ug/L	8.000		93.3	80-120			
⁷ anadium	12.12			ug/L	12.50		96.9	80-120			
Cinc	19.10			ug/L	20.00		95.5	80-120			
nstrument RL Check			Prepared &	& Analy	zed: 12/	03/2009					
ead	2.677			ug/L	3.000		89.2	80-120			

0911230 Metals Summ 14

Mercury by CVAA - Quality Control

Analyte Batch 9L33802	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC_ Limits	RPD	RPD Limit	Notes
Instrument RL Check			Prepared	: 12/02/	2009 An	alyzed:	12/03/200)9			
Mercury	0.1589			ug/L	0.2000	or mine o ∓ mesencencemanner- a.e.e cc.	79.4	70-130			
Instrument RL Check			Prepared	: 12/02/	2009 An	alyzed: 1	12/03/200)9			
Mercury	0.1561			ug/L	0.2000		78.0	70-130			

0911230 Metals Summ 15

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Instrument ID: ME-ICP

Project: Radford Army Ammunition Plant

Sequence: <u>9L33812</u> Calibration: <u>9338008</u>

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-ICB1	Aluminum	-0.8473	50.0	200	ug/L	U	SW6010B
	Antimony	-1.056	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.9216	3.00	5.00	ug/L	U	SW6010B
	Barium	0.1172	5.00	40.0	ug/L	U	SW6010B
	Beryllium	-0.001090	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.2363	1.00	5.00	ug/L	U	SW6010B
	Calcium	0.1700	1000	5000	ug/L	U	SW6010B
	Chromium	0.2348	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.2270	5.00	12.5	ug/L	U	SW6010B
	Copper	0.1997	5.00	10.0	ug/L	U	SW6010B
	Iron	-0.1070	30.0	100	ug/L	U	SW6010B
	Lead	0.01638	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-2.530	1000	5000	ug/L	U	SW6010B
	Manganese	0.04190	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.1469	3.00	10.0	ug/L	U	SW6010B
	Potassium	-3.100	1000	5000	ug/L	U	SW6010B
	Selenium	0.08067	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.03269	1.00	5.00	ug/L	U	SW6010B
	Sodium	-5.440	1000	5000	ug/L	U	SW6010B
	Thallium	0.1471	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.1155	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.1096	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB1	Aluminum	23.6	50.0	200	ug/L	U	SW6010B
	Antimony	-0.696	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.445	3.00	5.00	ug/L	U	SW6010B
	Barium	0.261	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.393	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.525	1.00	5.00	ug/L	U	SW6010B
	Calcium	25.3	1000	5000	ug/L	U	SW6010B
	Chromium	0.430	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.414	5.00	12.5	ug/L	U	SW6010B
	Copper	0.119	5.00	10.0	ug/L	U	SW6010B
	Iron	17.1	30.0	100	ug/L	U	SW6010B

0911230 Metals Summ Page 1**16**f 5

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Instrument ID: ME-ICP

Project: Radford Army Ammunition Plant

Sequence: <u>9L33812</u> Calibration: <u>9338008</u>

Lab Sample ID	Analyte	Found	MDL	MRL	Units	С	Method
9L33812-CCB1	Lead	0.516	1.50	3.00	ug/L	U	SW6010B
	Magnesium	25.4	1000	5000	ug/L	U	SW6010B
	Manganese	0.275	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.429	3.00	10.0	ug/L	U	SW6010B
	Potassium	0.290	1000	5000	ug/L	U	SW6010B
	Selenium	-0.329	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0778	1.00	5.00	ug/L	U	SW6010B
	Sodium	14.7	1000	5000	ug/L	U	SW6010B
	Thallium	0.607	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.440	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.607	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB2	Aluminum	4.47	50.0	200	ug/L	U	SW6010B
	Antimony	-0.290	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.553	3.00	5.00	ug/L	U	SW6010B
	Barium	0.0744	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0260	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.262	1.00	5.00	ug/L	U	SW6010B
	Calcium	25.6	1000	5000	ug/L	U	SW6010B
	Chromium	0.190	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0548	5.00	12.5	ug/L	U	SW6010B
	Copper	0.138	5.00	10.0	ug/L	U	SW6010B
	Iron	1.28	30.0	100	ug/L	U	SW6010B
	Lead	0.425	1.50	3.00	ug/L	U	SW6010B
	Magnesium	43.4	1000	5000	ug/L	U	SW6010B
	Manganese	0.00316	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.107	3.00	10.0	ug/L	U	SW6010B
	Potassium	54.5	1000	5000	ug/L	U	SW6010B
	Selenium	-0.367	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.249	1.00	5.00	ug/L	U	SW6010B
	Sodium	837	1000	5000	ug/L	U	SW6010B
	Thallium	-0.221	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.0989	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.0154	5.00	20.0	ug/L	U	SW6010B

0911230 Metals Summ Page **17**f 5

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285)

Instrument ID: ME-ICP Project: Radford Army Ammunition Plant

Sequence: <u>9L33812</u> Calibration: <u>9338008</u>

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L02007-BLK1	Aluminum	0.297	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	-0.00772	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.0722	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	0.00251	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000674	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	0.0471	0.0500	0.250	mg/Kg wet	U	SW6010B
	Calcium	0.816	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0438	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	-0.00684	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	0.00193	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.504	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	0.0173	0.0750	0.150	mg/Kg wet	U	SW6010B
	Magnesium	0.00850	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.0119	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0202	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	2.23	50.0	250	mg/Kg wet	U	SW6010B
	Silver	-0.00916	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	6.18	50.0	250	mg/Kg wet	U	SW6010B
	Thallium	-0.164	0.150	0.400	mg/Kg wet	J	SW6010B
	Vanadium	0.0000660	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.249	0.250	1.00	mg/Kg wet	U	SW6010B
9L33812-CCB3	Aluminum	15.7	50.0	200	ug/L	U	SW6010B
	Antimony	-0.463	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.47	3.00	5.00	ug/L	U	SW6010B
	Barium	0.311	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0586	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.260	1.00	5.00	ug/L	U	SW6010B
	Calcium	6.52	1000	5000	ug/L	U	SW6010B
	Chromium	0.543	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0413	5.00	12.5	ug/L	U	SW6010B
	Copper	0.0562	5.00	10.0	ug/L	U	SW6010B
	Iron	49.4	30.0	100	ug/L	J	SW6010B
	Lead	0.227	1.50	3.00	ug/L	U	SW6010B

0911230 Metals Summ Page 3**1&** 5

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Instrument ID: ME-ICP

Project: Radford Army Ammunition Plant

Sequence: 9L33812

Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	С	Method
9L33812-CCB3	Magnesium	2.36	1000	5000	ug/L	U	SW6010B
	Manganese	4.30	3.00	15.0	ug/L	J	SW6010B
	Nickel	-0.0357	3.00	10.0	ug/L	U	SW6010B
	Potassium	7.68	1000	5000	ug/L	U	SW6010B
	Selenium	-1.45	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.242	1.00	5.00	ug/L	U	SW6010B
	Sodium	36.2	1000	5000	ug/L	U	SW6010B
	Thallium	0.559	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.293	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.225	5.00	20.0	ug/L	U	SW6010B
9L33812-CCBA	Aluminum	4.46	50.0	200	ug/L	U	SW6010B
	Antimony	-0.592	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.585	3.00	5.00	ug/L	U	SW6010B
	Barium	0.230	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0622	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.0628	1.00	5.00	ug/L	U	SW6010B
	Calcium	21.4	1000	5000	ug/L	U	SW6010B
	Chromium	0.348	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.143	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.45	5.00	10.0	ug/L	U	SW6010B
	Iron	2.57	30.0	100	ug/L	U	SW6010B
	Lead	0.626	1.50	3.00	ug/L	U	SW6010B
	Magnesium	7.76	1000	5000	ug/L	U	SW6010B
	Manganese	0.199	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.405	3.00	10.0	ug/L	U	SW6010B
	Potassium	5.57	1000	5000	ug/L	U	SW6010B
	Selenium	-1.17	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.164	1.00	5.00	ug/L	U	SW6010B
	Sodium	-2.23	1000	5000	ug/L	U	SW6010B
	Thallium	0.360	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.0934	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.503	5.00	20.0	ug/L	U	SW6010B
9L02007-BLK2	Selenium	0.130	0.150	0.250	mg/Kg wet	U	SW6010B

0911230 Metals Summ

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Instrument ID: $\underline{\text{ME-ICP}}$

Project: Radford Army Ammunition Plant

Sequence: <u>9L33812</u> Calibration: <u>9338008</u>

Lab Sample ID	Analyte	Found	MDL	MRL	Units	С	Method
9L33812-CCBB	Aluminum	4.70	50.0	200	ug/L	U	SW6010B
	Antimony	-0.435	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.11	3.00	5.00	ug/L	U	SW6010B
	Barium	0.216	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0160	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.115	1.00	5.00	ug/L	U	SW6010B
	Calcium	4.29	1000	5000	ug/L	U	SW6010B
	Chromium	0.332	2.00	5.00	ug/L	U	SW6010B
•	Cobalt	0.0557	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.843	5.00	10.0	ug/L	U	SW6010B
	Iron	0.808	30.0	100	ug/L	U	SW6010B
	Lead	0.0465	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-10.2	1000	5000	ug/L	U	SW6010B
	Manganese	0.187	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.0470	3.00	10.0	ug/L	U	SW6010B
	Potassium	2.20	1000	5000	ug/L	U	SW6010B
	Selenium	-0.0346	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0433	1.00	5.00	ug/L	U	SW6010B
	Sodium	10.8	1000	5000	ug/L	U	SW6010B
	Thallium	0.0567	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.0269	5.00	12.5	ug/L	U	SW6010B
4	Zinc	0.246	5.00	20.0	ug/L	U	SW6010B

0911230 Metals Summ Page **520**£5

BLANKS SW7471A

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Instrument ID: ME-FIMS

Project: Radford Army Ammunition Plant

Sequence: <u>9L33802</u> Calibration: <u>9338002</u>

Lab Sample ID	Analyte	Found	MDL	MRL	Units	С	Method
9L33802-ICB1	Mercury	-0.04352	0.480	1.20	ug/L	U	SW7471A
9L02009-BLK1	Mercury	-0.00729	0.0130	0.0330	mg/Kg wet	U	SW7471A
9L33802-CCB1	Mercury	-0.0460	0.480	1.20	ug/L	U	SW7471A
9L33802-CCB2	Mercury	-0.0419	0.480	1.20	ug/L	U	SW7471A

0911230 Metals Summ Page 1**2d**f 1

ICP INTERFERENCE CHECK SAMPLE SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: $\underline{\text{ME-ICP}}$

Calibration: 9338008

Sequence: <u>9L33812</u>

b Sample ID	Analyte	True	Found	%R	Units
9L33812-IFA1	Aluminum	500000	515,430.00	103	ug/L
	Antimony		2.07		ug/L
	Arsenic		0.85		ug/L
	Barium		4.02		ug/L
	Beryllium		0.16		ug/L
	Cadmium		0.57		ug/L
	Calcium	500000	479,100.00	95.8	ug/L
	Chromium		-1.60		ug/L
	Cobalt		5.14		ug/L
	Copper		-7.89		ug/L
	Iron	200000	198,060.00	99.0	ug/L
	Lead		5.42		ug/L
	Magnesium	500000	505,620.00	101	ug/L
	Manganese		0.59		ug/L
	Nickel		-9.50		ug/L
No. 44	Potassium		-28.31		ug/L
	Selenium		0.06		ug/L
	Silver		0.08		ug/L
	Sodium		58.72		ug/L
	Thallium		3.27		ug/L
	Vanadium		0.77		ug/L
	Zinc		-0.22		ug/L
9L33812-IFB1	Aluminum	500000	484,790.00	97.0	ug/L
	Antimony	600.0	659.27	110	ug/L
	Arsenic	100.0	113.38	113	ug/L
	Barium	500.0	558.15	112	ug/L
	Beryllium	500.0	451.13	90.2	ug/L
	Cadmium	1000	1,179.60	118	ug/L
	Calcium	500000	447,290.00	89.5	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Instrument ID: ME-ICP

Calibration: 9338008

Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units
9L33812-IFB1	Chromium	500.0	426.93	85.4	ug/L
	Cobalt	500.0	481.47	96.3	ug/L
	Copper	500.0	496.37	99.3	ug/L
	Iron	200000	187,830.00	93.9	ug/L
	Lead	50.00	52.62	105	ug/L
	Magnesium	500000	470,380.00	94.1	ug/L
	Manganese	500.0	442.09	88.4	ug/L
	Nickel	1000	921.76	92.2	ug/L
	Potassium		4.63		ug/L
	Selenium	50.00	52.58	105	ug/L
	Silver	200.0	205.13	103	ug/L
	Sodium		132.52		ug/L
	Thallium	100.0	87.52	87.5	ug/L
	Vanadium	500.0	430.98	86.2	ug/L
	Zinc	1000	964.17	96.4	ug/L

0911230 Metals Summ Page 2**23**f 2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY SW6010B

NBG-Topsoil

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Solid</u>

Batch:

9L02007

% Solids:

78.24

Source Sample Name:

0911230-02

ANALYTE	SPIKE ADDED (mg/Kg dry)	SAMPLE CONCENTRATION (mg/Kg dry)	MS CONCENTRATION (mg/Kg dry)	MS % REC.	Q	QC LIMITS REC.
Beryllium	3.087	1.220	4.536	107		80 - 120
Calcium	308.7	1583	2589	326		80 - 120
Potassium	308.7	1142	1660	168		80 - 120
Sodium	308.7	ND	379.8	123	N	80 - 120

	SPIKE ADDED	MSD CONCENTRATION	MSD %	%	0	QC	LIMITS
ANALYTE	(mg/Kg dry)		REC. #	RPD	V	RPD	REC.
Beryllium	3.180	4.671	109	2.93		20	80 - 120
Calcium	318.0	2126	171	19.7		20	80 - 120
Potassium	318.0	1579	137	4.99		20	80 - 120
Sodium	318.0	389.3	122	2.46	N	20	80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY SW6010B

NBG-Topsoil

Laboratory: Empirical Laboratories, LLC

SDG: <u>0911230</u>

Client: Arcadis (A285)

Project: Radford Army Ammunition Plant

Matrix: Solid

Laboratory ID: 9L02007-PS1

Batch: 9L02007

Lab Source ID: <u>0911230-02</u>

Preparation: MET 3050B

Initial/Final: <u>2.04 g / 100 mL</u>

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
3eryllium	72.14	19.47	50.00	105	85 - 115
Calcium	30340	25260	5000	101	85 - 115
otassium	23440	18220	5000	104	85 - 115
Sodium	5666	ND	5000	108	85 - 115

LCS / LCS DUPLICATE RECOVERY SW6010B

Laboratory:

Empirical Laboratories, LLC

SDG:

<u>0911230</u>

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L02007

Laboratory ID:

9L02007-BS1

Preparation:

MET_3050B

Initial/Final:

<u>2 g / 100 mL</u>

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	112.1	112	80 - 120
Antimony	12.50	13.64	109	80 - 120
Arsenic	12.50	13.13	105	80 - 120
Beryllium	2.500	2.736	109	80 - 120
Cadmium	6.250	6.798	109	80 - 120
Calcium	250.0	267.7	107	80 - 120
Chromium	10.00	10.92	109	80 - 120
Cobalt	25.00	29.03	116	80 - 120
Copper	12.50	14.42	115	80 - 120
Iron	50.00	59.30	119	80 - 120
Lead	12.50	13.50	108	80 - 120
Magnesium	250.0	260.7	104	80 - 120
Manganese	25.00	28.62	114	80 - 120
Nickel	25.00	29.19	117	80 - 120
Potassium	250.0	281.4	113	80 - 120
Selenium	12.50	12.73	102	80 - 120
Silver	12.50	13.49	108	80 - 120
Sodium	250.0	290.1	116	80 - 120
Thallium	12.50	12.90	103	80 - 120
Vanadium	25.00	27.35	109	80 - 120
Zinc	25.00	28.03	112	80 - 120

0911230 Metals Summ Page 1**26**f 2

LCS / LCS DUPLICATE RECOVERY SW6010B

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L02007

Laboratory ID:

9L02007-BS2

Preparation:

MET_3050B

Initial/Final:

<u>2 g / 100 mL</u>

ANALYTE	ADDED (mg/Kg wet)	CONCENTRATION (mg/Kg wet)	% REC.	LIMITS REC.
Barium	100.0	120.9	121	80 - 120

LCS / LCS DUPLICATE RECOVERY SW7471A

Laboratory:

Empirical Laboratories, LLC

SDG:

<u>0911230</u>

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

<u>9L02009</u>

Laboratory ID:

9L02009-BS1

Preparation:

MET HG S

Initial/Final:

0.3 g / 50 mL

ANALYTE	SPIKE	LCS	LCS	QC
	ADDED	CONCENTRATION	%	LIMITS
	(mg/Kg wet)	(mg/Kg wet)	REC.	REC.
Mercury	0.3333	0.3698	111	80 - 120

ORGANIC CASE NARRATIVE

Arcadis Radford Workorder: 0911230

GC/MS Volatiles

Method: The samples were extracted/analyzed for a client specified list by USEPA SW-846 Methods 5035/8260B (Encore field sampling followed by laboratory preservation then purge and trap followed by capillary column GC/MS) for soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following notes/exceptions:

- BFB Tuning: All method tuning criteria were met.
- Initial Calibration Criteria: All method calibration criteria were met.
- Continuing Calibration Criteria: In the continuing calibration verification analyzed 12/8/09, 1,4-dioxane exceeded 20% difference with a positive bias. It was not detected in the associated samples. All other criteria were met.
- Method Blank Results: No target analytes were detected
- Surrogate Recoveries: All surrogate recoveries were within limits.
- LCS/LCSD Results: Recoveries of 1,4-dioxane exceeded limits with a positive bias. All associated samples were non-detect for 1,4-dioxane. All other recoveries were within limits.
- MS/MSD Sample Results: Not applicable.
- Internal Standard Area Counts: All internal standard area counts were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

GC/MS Semi-Volatiles

Method: The samples were analyzed by USEPA SW-846 Methods 3546/8270C (microwave extraction followed by capillary column GC/MS) for soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- DFTPP Tuning: All method tuning criteria were met.
- Calibration Criteria: All calibration criteria were met.
- Blank Results: No target analytes were detected in the method blank.
- Surrogate Recoveries: All surrogate recoveries were within limits.
- LCS results: Recovery of caprolactam exceeded the limit of 110% at 118%. All other recoveries were within limits.
- MS/MSD Sample Results: Of 130 recoveries, 7 exceeded limits with a positive bias while all relative percent differences were within limits. See form 3. Analysis of the MSD was started 12 hours 18 minutes after the associated tuning standard.
- Internal Standard Area Counts: All internal standard area counts were within limits.
- Dilutions: All samples were analyzed without dilution.

• Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included following this narrative. Before and after "pictures" are included with the raw data for each integration performed.

Pesticide Samples

Method: The samples were analyzed by USEPA SW-846 Methods 3546/8081A (microwave extraction followed by capillary column GC/ECD) for soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Performance Evaluation Mix: All method criteria were met.
- Initial Calibration Criteria: All method criteria were met. The multi-component analyte toxaphene was calibrated using a single point. No further calibration was required, as it was not detected in the sample.
- Continuing Calibration Criteria: All analytes were within 20% difference or exceeded with a positive bias. Results above the quantitation limit and associated to a positive bias are qualified with an "X" to indicate a potential positive bias.
- Blank Results: No target analytes were detected in the method blank.
- Surrogate Recoveries: Of 4 surrogate recoveries, at least 3 were within limits for all analyses. Exceedences were positive biases.
- LCS Results: Of 20 recoveries, 1 exceeded limits with a positive bias. See form 3.
- MS/MSD Results: Of 40 recoveries, 14 were outside limits with all relative percent differences within limits. See form 3.
- Dilutions: The samples were analyzed without dilution.
- Manual Integrations: As is necessary for all GC/LC chromatography, manual integrations were performed to correctly quantitate target analytes. A "before" chromatogram and "after" chromatogram is provided for all sample analyses to provide information regarding the manual integrations performed.

Herbicide Samples

Method: The samples were analyzed by USEPA SW-846 Methods 8151A (sonication then separatory funnel extraction followed by esterification then capillary column GC/ECD) for soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- Initial Calibration Criteria: All method criteria were met.
- Continuing Calibration Criteria: All analytes were within 20% difference.
- Blank Results: No target analytes were detected.
- Surrogate Recoveries: All recoveries were within limits.
- LCS Results: While results for dalapon were below the detection limit, recoveries were within limits. All other recoveries were within limits without qualification or exceeded with a positive bias. See form 3.
- MS/MSD Results: While results for dalapon were below the detection limit, recoveries were within limits. All other recoveries were within limits without qualification or exceeded with a

positive bias. See form 3.

- Dilutions: All samples were analyzed without dilution.
- Manual Integrations: As is necessary for all GC/LC chromatography, manual integrations were performed to correctly quantitate target analytes. A "before" chromatogram and "after" chromatogram is provided for all sample analyses to provide information regarding the manual integrations performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

- MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.
- **EQL**: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.
- U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.
- B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.
- D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".
- E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.
- J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.
- P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC/HPLC columns for the detected concentrations. The higher of the two values is reported for GC unless matrix interference is apparent. The primary column results are reported for HPLC unless matrix interference is apparent.
- M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.
- I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

ARCADIS

Laboratory Task Order No./P.O. No..

CHAIN-OF-CUSTODY RECORD Page _

Project Number/Name CTCSKAAR 41216 KG NUS	るころ			4	NALYSIS /	ANALYSIS / METHOD / SIZE	SIZE			
Project Location 12ADFORD - NRJ, VA	With			`	_		`	\		
Laboratory Empirical (Areamont)	W. C. C. C. C. C. C. C. C. C. C. C. C. C.				*	\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.	\	_		
Project Manager <u>Diané cupsBECk</u>		3	3	5,0	2	, E		_		
Sampler(s)/Affiliation Ciffls KALINGNSKI		30-	<u>B</u> ,	5.28	30	5301				
Date/Time Sample ID/Location Matrix Sampled	Lab ID	50g	2011	AT BAT	S. S.	Starth		Remarks	, C	Total
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Sample Matrix: L = Liguid; S = Solid;	/A = Air							Total No. of Bottles/ Containers	of Bottles/ Containers	
Relinquished by find Laborauli Received by:	Organization:	ganization: ///	CADIS		<u> </u>	Date 1/72 Date //	4,08	Time 2555	Seal Intact? Yes No N/A	R G
Relinquished by:	Organization:	ation:			۵	Date/	1,14		ו תס	dt?
Received by:	Organiza	ganization:			Δ 	Date 11 16		Time Oo-13	- Yes No	X X
Special instructions/Remarks:		. to (

5

AG 05-17/01

□0ther_

☐ Lab Courier

☐ In Person

Delivery Method:

EMPIRICAL LABORATORIES COOLER RECEIPT FORM

LIMS Number:	130	Number	of Coolers:	of
Client: Accadis	·	Project:	Radford	
Date/Time Received: 11/25/09	08:15		ler(s) opened	11/25/09
Opened By (print): WILLIAM So	CHWAB	(signature):	MANAR	
	Circle response be	elow as appropriate	;	
1. How did the samples arrive?:	<u>FedEx</u>	UPS	DHL	Hand Delivered
	EL Courier	Other:	2100	
If applicable, enter airbill number here:			0120	
2. Were custody seals on outside of coo	oler(s)?		Yes	No
How many: Seal of	late:	Manage .	Seal Initials:	
3. Were custody seals unbroken and int	act at the date and t	ime of arrival?	Yes	No (N/A)
4. Were custody papers sealed in a plas	tic bag included in t	the sample cooler?	(Yes)	No N/A
5. Were custody papers filled out prope	rly (ink, signed, etc	.)?		No N/A
6. Did you sign custody papers in the a	opropriate place for	acceptance?		No N/A
7. Was project identifiable from custod	y papers?		(es)	No N/A
8. If required, was enough ice present in	the cooler(s)?		Yes	No N/A
Type of Coolant: (WET) DRY	BLUE NONE	Temperature of S	Samples upon Receip	ot: 1-7"
Dates samples were logged-in:	11/25/09			
9. Initial this form to acknowledge login	n of sample(s): (Nar	ne): Will C	church (In	itial): <u>W</u>
10. Were all bottle lids intact and sealed			_	No N/A
11. Did all bottles arrive unbroken?		***************************************		No N/A
12. Was all required bottle label information	ation complete?			No N/A
13. Did all bottle labels agree with custo	ody papers?			No N/A
14. Were correct containers used for the	analyses indicated	?	(Yes)	No N/A
15. Were preservative levels correct in a	all applicable sample	e containers?	Yes	No N/A
16. Was residual chlorine present in any	applicable sample	containers?	Yes	No N/A
17. Was sufficient amount of sample ser	nt for the analyses re	equired?		No N/A
18. Was headspace present in any include	led VOA vials?		Yes	No (N/A)
If Non-Conformance issues were present	, list by sample ID:			
			CAD#.	

CLIENT SAMPLE NO.

NBG-BACKFILL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-01

Sample wt/vol: 4.8 (g/mL) G Lab File ID: 1123001A

Level: (low/med) LOW Date Sampled: 11/24/09 15:30

% Moisture: not dec. 16 Date Analyzed: 12/02/09 14:59

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: ____(uL)

CAS NO.	CONCENTRA' COMPOUND	TION UNITS: MDL		g/Kg) UG/KG CONC Q
75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 74-87-3 110-82-7 124-48-1 96-12-8 106-93-4 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 156-59-2 156-60-5 78-87-5 156-60-5 78-87-5 10061-01-5 10061-02-6 100-41-4 591-78-6 98-82-8 98-82-8 75-09-2 108-87-2 1634-04-4 108-10-1 100-42-5	BenzeneBromochloromethaneBromodichloromethaneBromoformBromomethane2-ButanoneCarbon disulfideCarbon tetrachlorideChlorobenzeneChloroethaneChloromethaneChloromethaneCyclohexaneDibromochloromethane1,2-Dibromo-3-chloropropane1,2-Dichlorobenzene1,2-Dichlorobenzene1,4-Dichlorobenzene1,4-Dichlorobenzene1,1-Dichloroethane1,1-Dichloroethane1,2-Dichloroethane1,2-Dichloroethene1,2-Dichloropropanetrans-1,2-Dichloroethenetrans-1,2-Dichloropropenetrans-1,3-Dichloropropene	2.5 0.58 0.52 0.37 1.2 0.89 1.7 1.6 1.1 0.42 1.4 0.68 0.64 0.62 1.53 0.46 0.57 1.5 1.4 0.67 0.57 0.62 0.39 0.92 2.1 0.37 0.39 0.72 0.39 0.72 0.33	12	טטטטטנטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
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CLIENT SAMPLE NO.

NBG-BACKFILL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-01

Sample wt/vol: 4.8 (g/mL) G Lab File ID: 1123001A

Level: (low/med) LOW Date Sampled: 11/24/09 15:30

% Moisture: not dec. 16 Date Analyzed: 12/02/09 14:59

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRAT	TION UNITS:	(ug/L or RL	ug/Kg) UG/KG CONC Q
108-88-3 87-61-6 120-82-1 71-55-6 79-00-5 76-13-1 75-69-4	-1,2,3-Trichloroben -1,2,4-Trichloroben -1,1,1-Trichloroeth -1,1,2-Trichloroeth -Trichloroethene -Trichlorotrifluoro -Trichlorofluoromet -Vinyl chloride	zeneaneaneaneaneaneaneaneaneaneaneane_ane	1.2 1.1 0.52 0.22 1.1 0.43 1.0 0.68 1.2 1.4	6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2	ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט

CLIENT SAMPLE NO.

NBG-BACKFILL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-01

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 1123001B

Level: (low/med) LOW Date Sampled: 11/24/09 15:30

% Moisture: not dec. 16 Date Analyzed: 12/08/09 18:26

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG
CAS NO. COMPOUND MDL RL CONC Q

CLIENT SAMPLE NO.

NBG-TOPSOIL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-02

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 1123002A

Level: (low/med) LOW Date Sampled: 11/24/09 14:30

% Moisture: not dec. 22 Date Analyzed: 12/02/09 15:30

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____(uL) Soil Aliquot Volume: ____(uL)

Company	CAS NO.	CONCENTRA! COMPOUND	TION UNITS: MDL	(ug/L or RL	ug/Kg) UG/KG CONC Q
FORM I VOA	71-43-2 74-97-5 75-27-4 75-25-2 74-83-9 78-93-3 75-15-0 56-23-5 108-90-7 75-00-3 74-87-3 110-82-7 124-48-1 96-12-8 106-93-4 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 175-34-3 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 100-41-4 591-78-6 98-82-8 79-20-9 108-87-2 1634-04-4 108-10-1 100-42-5	BenzeneBromochloromethaneBromodichloromethaneBromoformBromomethane2-ButanoneCarbon disulfideCarbon tetrachlorideChlorobenzeneChlorothaneChloromethaneChloromethaneChloromethaneCyclohexaneDibromochloromethane1,2-Dibromo-3-chloropropane1,2-Dichlorobenzene1,3-Dichlorobenzene1,4-Dichlorobenzene1,1-Dichloroethane1,1-Dichloroethane1,2-Dichloroethene1,1-Dichloroethenecis-1,2-Dichloroethenetrans-1,2-Dichloropropanecis-1,3-Dichloropropanecis-1,3-Dichloropropenetrans-1,3-Dichloropropene	0.61 0.54 0.39 1.3 0.93 1.1 0.44 0.77 0.44 0.77 0.44 0.77 0.46 0.41 0.65 0.41 0.65 1.4 0.65 0.49 0.65 1.1 0.65 0.49 0.49 0.49 0.49 0.49 0.49 0.49 0.49	555555555555555555555555555555555555555	טטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט

CLIENT SAMPLE NO.

NBG-TOPSOIL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-02

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 1123002A

Level: (low/med) LOW Date Sampled: 11/24/09 14:30

% Moisture: not dec. 22 Date Analyzed: 12/02/09 15:30

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	CONCENTRA	TION UNITS:	(ug/L or	ug/Kg) UG/KG
	COMPOUND	MDL	RL	CONC Q
108-88-3 87-61-6 120-82-1 71-55-6 79-00-5 79-01-6 76-13-1 75-69-4 75-01-4	TetrachloroetheneToluene1,2,3-Trichlorobenzene1,2,4-Trichlorobenzene1,1,1-Trichloroethane1,1,2-TrichloroethaneTrichloroetheneTrichlorotrifluoroethaneTrichlorofluoromethaneVinyl chlorideXylene(total)	1.2 1.1 0.54 0.23 1.2 0.45 1.1 0.71 1.2 1.4	5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.	ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט ט

CLIENT SAMPLE NO.

NBG-TOPSOIL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-02

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1123002B

Level: (low/med) LOW Date Sampled: 11/24/09 14:30

% Moisture: not dec. 22 Date Analyzed: 12/08/09 18:57

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____(uL) Soil Aliquot Volume: ____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG CAS NO. COMPOUND MDL RL CONC Q

FORM 2 SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Level: (low/med) LOW

	CLIENT	SMC1	SMC2	SMC3	SMC4	TOT
	SAMPLE NO.	(DFM)#	(DCE)#	(TOL)#	(BFB)#	OUT
			=====			===
01	9L04008-BLK1	102	96	100	99	0
02	9L04008-BLK1	105	112	97	100	0
03	NBG-BACKFILL	112	120	96	105	0
04	NBG-TOPSOIL	106 102	106 97	110 99	100 104	0
05 06	9L04008-BLK1 9L09002-BLK1	102	100	106	104	0
07	9L09002-BLK1	103	107	108	92	Ö
08	NBG-BACKFILL	103	108	110	102	Ö
09	NBG-TOPSOIL	104	98	110	97	0
10	9L09002-BLK1	95	98	102	97	0
11						
12						
13						
14 15	-					
16						
17						
18						
19			*****			
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23						
24 25						
26						
27						
28						
29						
30						

			EL QC LIMITS	SPIKE CONC (ug/Kg)
SMC1	(DFM)	= Dibromofluoromethane	(80-125)	30
SMC2	(DCE)	= 1,2-Dichloroethane-d4	(75-140)	30
SMC3	(TOL)	= Toluene-d8	(80-120)	30
		= Bromofluorobenzene	(80-125)	30

- # Column to be used to flag recovery values
- * Values outside of contract required QC limits
- D Surrogate results reported from a diluted analysis

page 1 of 1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix Spike - Client Sample No.: 9L04008-BLK1 Level: (low/med) LOW

	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
COMPOUND	(ug/Kg)	(ug/Kg)	(ug/Kg)	REC #	REC.
=======================================	========				
Acetone	100.0	0.0000	90.39	90	20-160
Benzene	50.00	0.0000	46.45	93	75-125
Bromochloromethane	50.00	0.0000	40.33	81	70-125
Bromodichloromethane	50.00	0.0000	47.54	95	70-130
Bromoform	50.00	0.0000	42.90	86	55-135
Bromomethane	50.00	0.0000	51.40	103	30-160
2-Butanone	100.0	0.0000	100.3	100	30-160
Carbon disulfide	50.00	0.0000	48.52	97	45-160
Carbon tetrachloride	50.00	0.0000	45.81	92	65-135
Chlorobenzene	50.00	0.0000	44.35	89	75-125
Chloroethane	50.00	0.0000	47.58	95	40-155
Chloroform	50.00	0.0000	41.75	84	70-125
Chloromethane	50.00	0.0000	51.22	102	50-130
Cyclohexane	50.00	0.0000	54.30	109	65-140
Dibromochloromethane	50.00	0.0000	44.89	90	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	39.60	79	40-135
1,2-Dibromoethane	50.00	0.0000	42.41	85	70-125
1,2-Dichlorobenzene	50.00	0.0000	42.20	84	75-120
1,3-Dichlorobenzene	50.00	0.0000	42.87	86	70-125
1,4-Dichlorobenzene	50.00	0.0000	43.75	88	70-125
Dichlorodifluoromethane	50.00	0.0000	61.02	122	35-135
1,1-Dichloroethane	50.00	0.0000	42.86	86	75-125
1,2-Dichloroethane	50.00	0.0000	47.05	94	70-125
1,1-Dichloroethene	50.00	0.0000	40.92	82	65-135
cis-1,2-Dichloroethene	50.00	0.0000	42.31	85	65-125
trans-1,2-Dichloroethen	50.00	0.0000	43.15	86	65-135
1,2-Dichloropropane	50.00	0.0000	47.43	95	70-120
cis-1,3-Dichloropropene	50.00	0.0000	44.96	90	70-125
la la table used to fla		r and PDD walue			l

Column to be used to flag recovery and RPD values with an asterisk

* Values	outside	of QC	limits
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COMMENTS:	

page 1 of 4

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix Spike - Client Sample No.: 9L04008-BLK1 Level:(low/med) LOW

	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	ૄ	LIMITS
COMPOUND	(ug/Kg)	(ug/Kg)	(ug/Kg)	REC #	REC.
=================================	========	=======================================			
trans-1,3-Dichloroprope	50.00	0.0000	46.38	93	65-125
Ethylbenzene	50.00	0.0000	45.95	92	75-125
2-Hexanone	100.0	0.0000	106.8	107	45-145
Isopropylbenzene	50.00	0.0000	54.20	108	75-130
Methyl acetate	50.00	0.0000	34.88	70	45-265
Methylene chloride	50.00	0.0000	35.27	70	55-140
Methyl cyclohexane	50.00	0.0000	47.98	96	65-135
Methyl-tert-butyl ether	50.00	0.0000	47.06	94	55-150
4-Methyl-2-pentanone	100.0	0.0000	117.6	118	45-145
Styrene	50.00	0.0000	44.50	89	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	43.41	87	55-130
Tetrachloroethene	50.00	0.0000	40.11	80	65-140
Toluene	50.00	0.0000	44.18	88	70-125
1,2,3-Trichlorobenzene	50.00	0.0000	44.28	88	60-135
1,2,4-Trichlorobenzene	50.00	0.0000	43.64	87	65-130
1,1,1-Trichloroethane	50.00	0.0000	43.75	88	70-135
1,1,2-Trichloroethane	50.00	0.0000	41.66	83	60-125
Trichloroethene	50.00	0.0000	49.34	99	75-125
Trichlorotrifluoroethan	50.00	0.0000	52.43	105	60-140
Trichlorofluoromethane	50.00	0.0000	51.26	102	25-185
Vinyl chloride	50.00	0.0000	50.68	101	60-125
Xylene(total)	150.0	0.0000	120.3	80	70-120
-	***************************************				l

#	Column	to	be	used	to	flag	recovery	and	RPD	values	with	an	asterisk
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COMMENTS:	

page 2 of 4

^{*} Values outside of QC limits

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix Spike - Client Sample No.: 9L04008-BLK1 Level:(low/med) LOW

	SPIKE ADDED	LCSD CONCENTRATION	LCSD %	% %		IMITS
COMPOUND	(ug/Kg)	(ug/Kg)	REC #	RPD #	RPD	REC.
Acetone	100.0	78.64	79	14	30	20-160
Benzene	50.00	49.51	99	6	30	75-125
Bromochloromethane	50.00	45.21	90	11	30	70-125
Bromodichloromethane	50.00	49.06	98	3	30	70-130
Bromoform	50.00	40.92	82	5	30	55-135
Bromomethane	50.00	51.66	103	0	30	30-160
2-Butanone	100.0	81.21	81	21	30	30-160
Carbon disulfide	50.00	47.97	96	1	30	45-160
Carbon tetrachloride	50.00	47.92	96	4	30	65-135
Chlorobenzene	50.00	45.37	91	2	30	75-125
Chloroethane	50.00	50.27	100	5	30	40-155
Chloroform	50.00	42.00	84	0	30	70-125
Chloromethane	50.00	48.25	96	6	30	50-130
Cyclohexane	50.00	50.34	101	8	30	65-140
Dibromochloromethane	50.00	44.92	90	0	30	65-130
1,2-Dibromo-3-chloropro	50.00	38.23	76	4	30	40-135
1,2-Dibromoethane	50.00	43.96	88	4	30	70-125
1,2-Dichlorobenzene	50.00	41.30	83	2	30	75-120
1,3-Dichlorobenzene	50.00	40.68	81	5	30	70-125
1,4-Dichlorobenzene	50.00	41.20	82	6	30	70-125
Dichlorodifluoromethane	50.00	57.34	115	6	30	35-135
1,1-Dichloroethane	50.00	43.44	87	1	30	75-125
1,2-Dichloroethane	50.00	46.73	93	1	30	70-125
1,1-Dichloroethene	50.00	40.39	81	1	30	65-135
cis-1,2-Dichloroethene	50.00	43.60	87	3	30	65-125
trans-1,2-Dichloroethen	50.00	41.12	82	5 3	30	65-135
1,2-Dichloropropane	50.00	48.94	98		30	70-120
cis-1,3-Dichloropropene	50.00	51.47	103	14	30	70-125
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Column to be used to flag recovery and RPD values with an asterisk

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COMMENTS:	

page 3 of 4

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix Spike - Client Sample No.: 9L04008-BLK1 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD # =====	QC LI RPD	IMITS REC.
trans-1,3-Dichloroprope Ethylbenzene 2-Hexanone Isopropylbenzene Methyl acetate Methylene chloride Methyl cyclohexane Methyl-tert-butyl ether 4-Methyl-2-pentanone Styrene 1,1,2,2-Tetrachloroetha Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichlorotrifluoroethan Trichlorofluoromethane Vinyl chloride Xylene(total)	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00	43.48 46.33 89.22 54.44 32.40 37.18 54.38 48.76 109.0 46.23 39.96 42.04 45.89 41.02 41.03 44.56 39.51 49.46 50.18 51.41 48.64 121.5	87 93 89 109 65 74 109 98 109 92 80 84 92 82 89 79 99 100 103 97 81	6 1 18 0 7 5 12 4 8 4 8 5 4 8 6 2 5 0 4 0 4 0 4	30 30 30 30 30 30 30 30 30 30 30 30 30 3	65-125 75-125 45-145 75-130 45-265 55-140 65-135 55-150 45-145 75-125 55-130 65-140 70-125 60-135 60-125 75-125 60-140 25-185 60-125 70-120

Column to be used to flag recovery and RPD values with an asterisk

*	Values	outside	of (QC	limits
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RPD: 0 out of 50 outside limits Spike Recovery: 0 out of 100 outside limits

COMMENTS:	

page 4 of 4

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix Spike - Client Sample No.: 9L09002-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
	(ug/Kg)	(ug/Kg)	(ug/Kg)	REC #	REC.
1,4-Dioxane	1000	0.0000	2070	207*	50-150

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LI RPD	MITS REC.
1,4-Dioxane	1000	1663	166*	22	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery: 2 out of 2 outside limits

COMMENTS:	

FORM 4 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9L04008-BLK1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab File ID: V5BLK01

Lab Sample ID: 9L04008-BLK1

Date Analyzed: 12/02/09

Time Analyzed: 1357

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01 02 03 04 05 06 07 08 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 25 26 26 27 27 27 27 27 27 27 27 27 27 27 27 27	SAMPLE NO. ====================================	SAMPLE ID ====================================	f I	1
26 27 28 29				
30				

COMMENTS:	

page 1 of 1

FORM 1 VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9L04008-BLK1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL Lab Sample ID: 9L04008-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled:

% Moisture: not dec. 0 Date Analyzed: 12/02/09 13:57

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: ____(uL) Soil Aliquot Volume: ____(uL)

CONCENTRA' CAS NO. COMPOUND	TION UNITS:	(ug/L or u RL	ıg/Kg) UG/KG CONC Ç	_
67-64-1	2.0 0.47 0.42 0.30 1.0 0.72 1.4 1.3 0.88 0.34 1.1 0.55 0.52 0.54 0.34 1.2 0.43 0.37 0.84 0.55 1.1 0.54 0.46 1.2 1.1 0.46 0.50 0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.35 0.32 0.32 0.32 0.33 0.34 0.35 0.34 0.43 0.43 0.43 0.44 0.55 0.54 0.46 0.55 0.54 0.46 0.32 0.32 0.33 0.32 0.32 0.33 0.32 0.33 0.34 0.35 0.34 0.45 0.46 0.55 0.5	10 5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.	ממממממממממממממממממממממממממממ	

FORM 1 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

CLIENT SAMPLE NO.

9L04008-BLK1

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab Sample ID: 9L04008-BLK1 Matrix: (soil/water) SOIL

Lab File ID: V5BLK01 Sample wt/vol: 5.0 (g/mL) G

Date Sampled: _____ Level: (low/med) LOW

Date Analyzed: 12/02/09 13:57 % Moisture: not dec. 0

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Aliquot Volume: ____(uL) Soil Extract Volume: ____(uL)

CAS NO.	CONCENTRA	TION UNITS:	(ug/L or	r ug/Kg) UG/	/KG
	COMPOUND	MDL	RL	CONC	Q
108-88-3T 87-61-61 120-82-11 71-55-61 79-00-51 79-01-6T 76-13-1T	,2,3-Trichlorobenzene ,2,4-Trichlorobenzene ,1,1-Trichloroethane ,1,2-Trichloroethane richloroethene richlorotrifluoroethane richlorofluoromethane inyl chloride	0.97 0.86 0.42 0.18 0.90 0.35 0.85 0.55 0.95 1.1	5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0		

FORM 4 VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9L09002-BLK1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab File ID: V5BLK01 Lab Sample ID: 9L09002-BLK1

Date Analyzed: 12/08/09 Time Analyzed: 1755

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	9L09002-BLK1	9L09002-BS1	V5LCS01	1649 1826
02	NBG-BACKFILL	0911230-01 0911230-02	1123001B 1123002B	1857
03 04	NBG-TOPSOIL 9L09002-BLK1	9L09002-BSD1	V5LCSD01	1928
05	DEODOGE BERGE	2203001 2021		
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COMMENTS:

page 1 of 1

FORM 1 VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9L09002-BLK1 Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Matrix: (soil/water) SOIL

Lab Sample ID: 9L09002-BLK1

Sample wt/vol: 5.0 (g/mL) G

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab File ID: V5BLK01

Level: (low/med) LOW

Date Sampled: _____

% Moisture: not dec. 0

Date Analyzed: 12/08/09 17:55

GC Column: RTX-VRX ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG CONC CAS NO. COMPOUND MDL

50 0.50 U 123-91-1----1,4-Dioxane

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA83153

Lab File ID: V5BFB01 BFB Injection Date: 05/12/09

Instrument ID: VOA5 BFB Injection Time: 0929

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50 75 95 96 173 174 175 176	15.0 - 40.0% of mass 95 30.0 - 60.0% of mass 95 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 95 Less than 2.0% of mass 174 Greater than 50.0% of mass 95 5.0 - 9.0% of mass 174 95.0 - 101.0% of mass 174 5.0 - 9.0% of mass 176	21.0 45.8 100.0 7.2 0.0 (0.0)1 54.9 4.2 (7.7)1 53.1 (96.8)1 3.8 (7.2)2
1	1-Value is % mass 174 2-Value is % mass	176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

page 1 of 1

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA83153

Lab File ID: V5BFB01 BFB Injection Date: 10/02/09

Instrument ID: VOA5 BFB Injection Time: 1020

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50 75 95 96 173 174 175 176 177	15.0 - 40.0% of mass 95 30.0 - 60.0% of mass 95 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 95 Less than 2.0% of mass 174 Greater than 50.0% of mass 95 5.0 - 9.0% of mass 174 95.0 - 101.0% of mass 174 5.0 - 9.0% of mass 176	18.7 42.5 100.0 7.0 0.0 (0.0)1 100.8 7.7 (7.7)1 98.5 (97.7)1 7.0 (7.1)2
l l	1-Value is % mass 174 2-Value is % mass	176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

		-	·		
	EPA	LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
	DAME INC.				
			***************************************	10/00/00	1051
01		V5STD2PPB	V5STD01	10/02/09	1051
02		V5STD5PPB	V5STD02	10/02/09	1122
03		V5STD10PPB	V5STD03	10/02/09	1153
	1	V5STD20PPB	V5STD04	10/02/09	1224
04					
05		V5STD50PPB	V5STD05	10/02/09	1256
06	V5BLK1002LCS	V5BLK1002LCS	V5ICV01	10/02/09	1327
07		V5STD100PPB	V5STD06	10/02/09	1358
08		V5STD200PPB	V5STD07	10/02/09	1429
		VSCIBZUULIE	V35120,	10,02,00	
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page 1 of 1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab File ID: SEQ-TUN1 BFB Injection Date: 12/02/09

Instrument ID: VOA5 BFB Injection Time: 1121

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50 75 95 96 173 174 175 176	15.0 - 40.0% of mass 95 30.0 - 60.0% of mass 95 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 95 Less than 2.0% of mass 174 Greater than 50.0% of mass 95 5.0 - 9.0% of mass 174 95.0 - 101.0% of mass 174 5.0 - 9.0% of mass 176	23.3 44.9 100.0 7.2 0.0 (0.0)1 69.9 5.6 (8.0)1 68.5 (98.0)1 4.7 (6.9)2
l	1-Value is % mass 174 2-Value is % mass	176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA	LAB	LAB	DATE	TIME
SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
01 SEQ-CCV1 02 9L04008-BLK1 03 9L04008-BLK1 04 NBG-BACKFILI 05 NBG-TOPSOIL 06 9L04008-BLK1 07 08 09 10	9L04008-BLK1 0911230-01 0911230-02	======================================	12/02/09 12/02/09 12/02/09 12/02/09 12/02/09 12/02/09	1152 1223 1357 1459 1530 1806

page 1 of 1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab File ID: SEQ-TUN1 BFB Injection Date: 12/08/09

Instrument ID: VOA5 BFB Injection Time: 1515

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50 75 95 96 173 174 175 176	15.0 - 40.0% of mass 95 30.0 - 60.0% of mass 95 Base Peak, 100% relative abundance 5.0 - 9.0% of mass 95 Less than 2.0% of mass 174 Greater than 50.0% of mass 95 5.0 - 9.0% of mass 174 95.0 - 101.0% of mass 174 5.0 - 9.0% of mass 176	19.4 41.3 100.0 6.8 0.0 (0.0)1 106.6 8.0 (7.5)1 105.8 (99.2)1 7.0 (6.6)2
	1-Value is % mass 174 2-Value is % mass	176

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	1	7.00	LAB	DATE	TIME
	EPA	LAB			
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
			=======================================		
01	V5STD100PPB	SEQ-CCV2	SEQ-CCV2	12/08/09	1618
02	9L09002-BLK1	9L09002-BS1	V5LCS01	12/08/09	1649
03	9L09002-BLK1	9L09002-BLK1	V5BLK01	12/08/09	1755
04	NBG-BACKFILL	0911230-01	1123001B	12/08/09	1826
05	NBG-TOPSOIL	0911230-02	1123002B	12/08/09	1857
06	9L09002-BLK1	9L09002-BSD1	V5LCSD01	12/08/09	1928
07	JEOJOOZ BERGE	3203002 2021	732323	,,	
08					
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page 1 of 1

FORM 8 VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 12/02/09

Instrument ID: VOA5 Time Analyzed: 1152

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

AREA # RT # AREA # AREA # AREA # AREA # AREA # RT # AREA # RT # AREA # RT # AREA # AREA # AREA # AREA # AREA # RT # AREA # RT # AREA # AREA # AREA # AREA # AREA # RT # AREA # RT # AREA # RT # RT # AREA # RT # AREA # ARE							
12 HOUR STD UPPER LIMIT LOWER LIMIT LOWER LIMIT HOWER LIMIT SAMPLE NO. 20 1 9L04008-BLK1 751753 12.05 304758 15.64 307750 17.50 17.50 19.04008-BLK1 7694029 12.05 268476 15.64 307750 17.50 19.04008-BLK1 789241 12.04 342485 15.65 313913 17.49 17.49 17.49		IS1 (FLB)		IS2 (CBZ)		IS3 (DCB)	
12 HOUR STD UPPER LIMIT 1612570 12.54 677196 16.14 747252 18.00 18.00 16.14 16.14 747252 18.00 1		AREA #	RT #	AREA #	RT #	AREA #	RT #
UPPER LIMIT 1612570 12.54 677196 16.14 747252 18.00 17.00 Column					=		======
UPPER LIMIT	12 HOUR STD	806285	12.04	338598	15.64	373626	17.50
LOWER LIMIT						747252	18.00
CLIENT SAMPLE NO. 9L04008-BLK1 819021 12.05 344345 15.64 366936 17.50 9L04008-BLK1 751753 12.05 304758 15.65 313913 17.51 03 NBG-BACKFILL 707985 12.04 299817 15.64 307750 17.50 NBG-TOPSOIL 694029 12.05 268476 15.64 259586 17.50 9L04008-BLK1 789241 12.04 342485 15.65 390994 17.49 06 07							
SAMPLE NO. SAMPLE NO.	LOWER LIMITI	403143	11.04	10222			
SAMPLE NO. SAMPLE NO.							
Second Second							
01 9L04008-BLK1 819021 12.05 344345 15.64 366936 17.50 29L04008-BLK1 751753 12.05 304758 15.65 313913 17.51 303 NBG-BACKFILL 707985 12.04 299817 15.64 307750 17.5	SAMPLE NO.						
02 9L04008-BLK1 751753 12.05 304758 15.65 313913 17.51 03 NBG-BACKFILL 707985 12.04 299817 15.64 307750 17.50 04 NBG-TOPSOIL 694029 12.05 268476 15.64 259586 17.50 05 9L04008-BLK1 789241 12.04 342485 15.65 390994 17.49 06 07					15 64	366036	17 50
03 NBG-BACKFILL 707985 12.04 299817 15.64 307750 17.50 NBG-TOPSOIL 694029 12.05 268476 15.64 259586 17.50 17.49	1 -		1				
03 NBG-BARTH IN NBG-TOPSOIL 694029 12.05 268476 15.64 259586 17.50 17.49	02 9L04008-BLK1						
05 9L04008-BLK1 789241 12.04 342485 15.65 390994 17.49 06 07	03 NBG-BACKFILL	707985					
05 9L04008-BLK1 789241 12.04 342485 15.65 390994 17.49 06 07	04 NBG-TOPSOIL	694029	12.05	268476	15.64		
06 07 —		789241	12.04	342485	15.65	390994	17.49
07							
08 09 10 11 12 13 14 15 16 17 18 19 20 21							
09 10 11 12 13 14 15 16 17 18 19 20 21							
10							
11 12 13 14 15 16 17 18 19 20 21							
12							
13							
14 15 16 17 18 19 20 21							
15							
16							
17 18 19 20 21							
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19							
20							
21							
22	22						ll

IS1 (FLB) = Fluorobenzene

IS2 (CBZ) = Chlorobenzene-d5

IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

* Values outside of QC limits.

page 1 of 1

FORM 8 VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 12/08/09

Instrument ID: VOA5 Time Analyzed: 1618

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 (FLB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD UPPER LIMIT LOWER LIMIT	973082 1946164 486541	12.04 12.54 11.54	359445 718890 179723	15.64 16.14 15.14	352490 704980 176245	17.50 18.00 17.00
	CLIENT SAMPLE NO.						
01 02 03 04 05 06 07 08 09	9L09002-BLK1 9L09002-BLK1 NBG-BACKFILL NBG-TOPSOIL 9L09002-BLK1	1040148 918037 927985 947797 1018559	12.04 12.04 12.04 12.05 12.05	393428 335457 318377 331473 383578	15.63 15.64 15.64 15.64 15.64	437133 325454 316051 312890 419312	17.49 17.50 17.50 17.50 17.50
10 11 12 13 14 15							
17 18 19 20 21 22							

IS1 (FLB) = Fluorobenzene

IS2 (CBZ) = Chlorobenzene-d5

IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area AREA LOWER LIMIT = -50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.

* Values outside of QC limits.

page 1 of 1

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA77461

Instrument ID: VOA5

Calibration Date(s): 05/12/09 05/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1512 1851

LAB FILE ID: RF2: V5STDAP1 RF20: V5STDAP4 RF50: V5STDAP5

RF5: V5STDAP2 RF10: V5STDAP3

COMPOUND	RF2	RF5	RF10	RF20	RF50
Acetonitrile Allyl chloride Chloroprene cis-1,4-Dichloro-2-butene trans-1,4-Dichloro-2-butene 1,4-Dioxane Hexane Isobutyl alcohol Methacrylonitrile Propionitrile	0.038	0.049	0.050	0.052	0.057
	0.169	0.173	0.184	0.195	0.200
	0.406	0.392	0.377	0.445	0.481
	0.081	0.070	0.086	0.119	0.141
	0.082	0.091	0.087	0.134	0.160
	0.000	0.000	0.000	0.000	0.001
	0.493	0.511	0.523	0.572	0.641
	0.003	0.006	0.005	0.006	0.005
	0.070	0.088	0.091	0.110	0.117
	0.015	0.022	0.020	0.020	0.021



Lab Name: EMPIRICAL LABS Contract:

Lab Code:

Case No.: NA SAS No.: NA SDG No.: SDGA77461

Instrument ID: VOA5

Calibration Date(s): 05/12/09 05/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1512 1851

LAB FILE ID: RF100: V5STDAP6 RF200: V5STDAP7

COMPOUND ====================================	RF100 ===================================	RF200 0.052 0.183 0.477 0.159 0.191 0.001 0.620
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FORM 6 VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA77461

Instrument ID: VOA5 Calibration Date(s): 05/12/09 05/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1512 1851

			COEFFICENTS		%RSD
COMPOUND	CURVE	A0	A1	A2	OR R^2
	=====			========	========
Acetonitrile	AVRG		4.975e-002		11.8
Allyl chloride	AVRG		0.18597783		6.4
Chloroprene	AVRG		0.43672660		10.1
cis-1,4-Dichloro-2-butene	LINR	0.00000000	0.16020482		0.996
trans-1,4-Dichloro-2-butene_	LINR	0.00000000	0.18976967		0.996
1,4-Dioxane		0.00000000	1336.65785	-3230.1947	0.997
Hexane	AVRG		0.56308339		10.0
Isobutyl alcohol		0.00000000	5.416e-003		0.998
Methacrylonitrile	LINR		0.10918746		0.999
Methacrytoliteric	AVRG	0.000000	1.974e-002		10.8
Propionitrile					
				I	



Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03 RF20: V5STD04

COMPOUND	RF2	RF5	RF10	RF20	RF50
Acetone	0.163	0.102	0.091	0.102	0.094
Acrolein	0.038	0.029		0.036	•
Acrylonitrile	0.080	0.055		0.068	0.058
Benzene	1.228	1.058		1.338	1.166
Bromobenzene	0.966	0.844		1.002	0.920
Bromochloromethane	0.195	0.161	0.166	0.204	0.190
Bromodichloromethane	0.391	0.359	0.340	0.438	0.380
Bromoform	0.422	0.377	0.419	0.487	0.506
Bromomethane	0.290	0.227	0.240	0.278	0.276
2-Butanone	0.144	0.072	0.090	0.122	
n-Butylbenzene	2.684	2.665	2.873	3.030	3.028
sec-Butylbenzene	3.230	3.462	3.571	3.911	3.636
tert-Butylbenzene	2.000	1.986	2.089	2.392	2.379
Carbon disulfide	0.866	0.789	0.718	0.901	0.872
Carbon tetrachloride	0.363	0.352	0.351	0.426	0.406
Chlorobenzene	2.274	2.187	2.158	2.366	2.355
Chloroethane	0.186	0.178	0.160	0.183	0.169
2-Chloroethyl vinyl ether	0.076	0.060	0.072	0.101	0.098
Chloroform	0.707	0.556	0.563	0.641	0.618
1-Chlorohexane	1.126	1.034	1.095	1.305	1.225
Chloromethane	0.437	0.358	0.353	0.426	0.389
2-Chlorotoluene	2.079	2.096	2.317	2.516	2.305
4-Chlorotoluene	2.201	1.860	2.102	2.436	2.346
Cyclohexane	0.468	0.424	0.496	0.522	0.470
Dibromochloromethane	0.790	0.709	0.750	0.878	0.894
1,2-Dibromo-3-chloropropane	0.132	0.120	0.119	0.130	0.132
1,2-Dibromoethane	0.671	0.647	0.612	0.715	0.728
Dibromomethane	0.188	0.183	0.171	0.208	0.186
1,2-Dichlorobenzene	1.638	1.481	1.578	1.656	1.550
1,3-Dichlorobenzene	1.776	1.596	1.655	1.846	1.796
t-Butyl alcohol	0.021	0.014	0.015	0.019	0.016
1,4-Dichlorobenzene	2.174	1.812	1.789	1.916	1.709
Dichlorodifluoromethane	0.386	0.320	0.323	0.402	0.365
1,1-Dichloroethane	0.498	0.427	0.438	0.492	0.470
1,2-Dichloroethane	0.350	0.325	0.315	0.363	0.349
1,1-Dichloroethene	0.270	0.225	0.207	0.258	0.230
cis-1,2-Dichloroethene	0.366	0.332	0.324	0.384	0.367
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Lab Name: EMPIRICAL LABS Contract:

SDG No.: SDGA18241 Case No.: NA SAS No.: NA Lab Code:

Calibration Date(s): 10/02/09 10/02/09 Instrument ID: VOA5

Calibration Time(s): 1051 1429 ID: 0.25 (mm) Column: RTX-VRX

RF2: V5STD01 LAB FILE ID:

RF5: V5STD02 RF10: V5STD03 RF50: V5STD05 RF20: V5STD04

RF10 RF20 RF50 RF2 RF5 COMPOUND _____ 0.312 0.284 0.289 0.328 0.313 1,2-Dichloroethene(total) trans-1,2-Dichloroethene 0.258 0.235 0.254 0.272 0.259 0.271 0.294 0.297 0.336 0.338 1,2-Dichloropropane 1,3-Dichloropropane 0.948 0.881 0.887 1.047 0.995 0.466 2,2-Dichloropropane 0.422 0.361 0.371 0.424 0.368 0.352 0.468 0.428 1,1-Dichloropropene 0.323 0.376 0.483 0.482 cis-1,3-Dichloropropene 0.414 0.371 0.931 trans-1,3-Dichloropropene 0.741 0.938 0.641 0.648 3.510 3.271 3.181 3.583 3.856 Ethylbenzene Ethyl methacrylate 0.540 0.590 0.685 0.786 0.524 0.708 0.610 0.662 0.723 0.696 Hexachlorobutadiene 0.459 0.313 0.338 0.357 0.439 2-Hexanone 0.391 0.427 0.556 0.528 0.375 Iodomethane 2.703 3.106 3.040 2.638 2.679 Isopropylbenzene 2.648 2.639 2.678 2.922 2.760 p-Isopropyltoluene 0.208 0.173 0.163 0.176 0.163 Methyl acetate 0.439 0.540 0.479 0.428 0.427 Methyl cyclohexane_ 0.274 Methylene chloride 0.897 0.418 0.334 0.342 0.194 0.131 0.108 0.129 0.179Methyl methacrylate_ 0.202 0.173 0.229 0.224 4-Methyl-2-pentanone 0.174 0.495 0.406 0.426 0.481 0.452 MTBE 2.132 1.476 1.624 1.847 1.775 Naphthalene 3.780 3.496 3.407 4.324 4.004 n-Propylbenzene_ 1.741 1.803 1.652 2.344 2.285 Styrene 0.717 1,1,1,2-Tetrachloroethane 0.730 0.701 0.833 0.812 0.747 1,1,2,2-Tetrachloroethane 0.698 0.746 0.656 0.753 Tetrachloroethene 0.982 0.997 1.058 1.029 1.121 0.050 0.054 0.078 0.044 0.051 Tetrahydrofuran _ 1.876 1.761 1.746 1.818 1.910 Toluene 1,2,3-Trichlorobenzene 0.998 1.097 0.878 0.950 1.024 1,2,4-Trichlorobenzene 1.131 1.184 0.952 1.126 1.197 1,1,1-Trichloroethane 0.430 0.389 0.392 0.450 0.421 0.498 0.497 0.620 0.553 0.553 1,1,2-Trichloroethane 0.312 0.360 0.319 0.326 0.301 Trichloroethene 0.266 0.318 0.287 Trichlorotrifluoroethane 0.302 0.262 Trichlorofluoromethane 0.398 0.414 0.491 0.466 0.440 0.159 0.158 0.174 0.175 0.177 1,2,3-Trichloropropane____

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5

Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03 RF20: V5STD04

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Vinyl acetate Vinyl chloride m,p-Xylene Xylene(total) Di-Isopropyl Ether ETBE tert-Amyl Methyl Ether	2.543 2.344 0.364 0.363 2.916 8.690 1.042 0.599 0.701	2.453 2.269 0.345 0.289 2.747 8.227 0.915 0.583 0.558	2.610 2.479 0.407 0.246 2.630 7.925 0.973 0.674	2.771 2.715 0.509 0.391 2.832 8.644 1.128 0.804 0.638	2.667 0.468 0.341 2.808 8.564 1.129 0.772
Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	0.761 0.343 0.051 2.136 0.884	0.327 0.050 2.303 0.942	0.344 0.049 2.253 0.881	0.346 0.046 2.154 0.877	0.330 0.047 2.381

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5

Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

	1	
COMPOUND	RF100	RF200
	0.093	0.086
Acetone		0.026
Acrolein	0.031	0.026
Acrylonitrile	0.060 1.204	
Benzene		1.042 0.954
Bromobenzene	0.959	
Bromochloromethane	0.192	0.182
Bromodichloromethane	0.425	0.372
Bromoform	0.543	0.568
Bromomethane	0.282	0.269
2-Butanone	0.127	0.117
n-Butylbenzene	2.850	2.443
sec-Butylbenzene	3.459	2.810
tert-Butylbenzene	2.217	1.998
Carbon disulfide	0.866	0.817
Carbon tetrachloride	0.420	0.397
Chlorobenzene	1.991	1.714
Chloroethane	0.172	0.152
2-Chloroethyl vinyl ether	0.106	0.101
Chloroform	0.605	0.565
1-Chlorohexane	1.087	0.952
Chloromethane	0.362	0.358
2-Chlorotoluene	2.244	2.085
4-Chlorotoluene	2.216	1.890
Cyclohexane	0.512	0.464
Dibromochloromethane	0.795	0.788
1,2-Dibromo-3-chloropropane	0.143	0.149
1,2-Dibromoethane	0.646	0.638
Dibromomethane	0.192	0.182
1,2-Dichlorobenzene	1.592	1.384
1,3-Dichlorobenzene	1.690	1.676
t-Butyl alcohol	0.018	0.016
1.4-Dichlorobenzene	1.541	1.352
Dichlorodifluoromethane	0.366	0.350
1,1-Dichloroethane	0.438	0.445
1,2-Dichloroethane	0.358	0.335
1,1-Dichloroethene	0.248	0.222
cis-1,2-Dichloroethene	0.389	0.361

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

	7	
COMPOUND	RF100	RF200
	=======	
1,2-Dichloroethene(total)	0.334	0.309
trans-1,2-Dichloroethene	0.278	0.258
1,2-Dichloropropane	0.326	0.291
1,3-Dichloropropane	0.876	0.840
2,2-Dichloropropane	0.449	0.426
1,1-Dichloropropene	0.454	0.417
cis-1,3-Dichloropropene	0.467	0.410
trans-1,3-Dichloropropene	0.915	0.832
Ethylbenzene	3.228	2.586
Ethyl methacrylate	0.722	0.694
Hexachlorobutadiene	0.678	0.681
2-Hexanone	0.458	0.405
Iodomethane	0.555	0.508
Isopropylbenzene	2.750	2.157
p-Isopropyltoluene	2.407	2.153
Methyl acetate	0.172	0.154
Methyl cyclohexane	0.513	0.449
Methylene chloride	0.291	0.249
Methyl methacrylate	0.193	0.190
4-Methyl-2-pentanone	0.223	0.216
MTBE	0.448	0.431
Naphthalene	1.877	1.819
n-Propylbenzene	3.658	3.024
Styrene	1.825	1.687
1,1,1,2-Tetrachloroethane	0.742	0.664
1,1,2,2-Tetrachloroethane	0.727	0.685
Tetrachloroethene	0.892	0.788
Tetrahydrofuran	0.053	0.054
Toluene	1.703	1.510
1,2,3-Trichlorobenzene	1.004	0.997
1,2,4-Trichlorobenzene	1.136	1.082
1,1,1-Trichloroethane	0.450	0.428
1,1,2-Trichloroethane	0.492	0.463
Trichloroethene	0.328	0.294
Trichlorotrifluoroethane	0.301	0.275
Trichlorofluoromethane	0.470	0.431
1,2,3-Trichloropropane	0.162	0.151

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5

Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

		-
COMPOUND	RF100	RF200
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Vinyl acetate Vinyl chloride m,p-Xylene Xylene(total) Di-Isopropyl Ether ETBE tert-Amyl Methyl Ether	2.491 2.520 0.500 0.306 2.266 7.002 1.195 0.817 0.608	2.181 2.188 0.453 0.259 1.712 5.507 1.084 0.727 0.608
Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	0.347 0.048 2.222 0.917	0.316 0.044 2.121 0.846

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

		T	COEFFICENTS		%RSD
COMPOUND	CURVE		A1	A2	OR R^2
	= ====	_========	§	_========	ł
Acetone	LINR	0.00000000	8.817e-002		0.998
Acrolein	AVRG		3.143e-002		14.3
Acrylonitrile	AVRG		6.189e-002		14.6
Benzene	AVRG		1.15969595		9.2
Bromobenzene	AVRG		0.93913497		5.3
Bromochloromethane	AVRG		0.18430562		8.6
Bromodichloromethane_	AVRG		0.38634915		9.0
Bromoform	AVRG		0.47469350		14.9
Bromomethane	AVRG		0.26616532		8.8
2-Butanone	LINR	0.00000000	0.11978584		0.998
n-Butylbenzene	AVRG		2.79599379		7.6
sec-Butylbenzene	AVRG		3.43982164		10.1
tert-Butylbenzene	AVRG		2.15176029		8.3
Carbon disulfide	AVRG		0.83259214		7.5
Carbon tetrachloride	AVRG		0.38767632		8.3
Chlorobenzene	AVRG		2.14944782		10.8
Chloroethane	AVRG		0.17168868		7.3
2-Chloroethyl vinyl ether	LINR	0.00000000	0.10213250		0.999
Chloroform	AVRG		0.60797242		8.9
1-Chlorohexane	AVRG		1.11788394		10.5
Chloromethane	AVRG		0.38328271		9.2
2-Chlorotoluene	AVRG		2.23457226		7.2
4-Chlorotoluene	AVRG		2.15033461		10.1
Cyclohexane	AVRG		0.47956779		6.9
Dibromochloromethane	AVRG		0.80065580		8.2
1,2-Dibromo-3-chloropropane	AVRG		0.13210715		8.4
1,2-Dibromoethane	AVRG		0.66539171		6.3
Dibromomethane	AVRG		0.18730109		5.9
1,2-Dichlorobenzene	AVRG		1.55427247		6.1
1,3-Dichlorobenzene	AVRG		1.71929684		5.2
t-Butyl alcohol	AVRG		1.703e-002		12.8
1.4-Dichlorobenzene	AVRG		1.75615514		15.0
Dichlorodifluoromethane	AVRG		0.35896206		8.5
1,1-Dichloroethane	AVRG [0.45846995		6.2
1,2-Dichloroethane	AVRG		0.34215185		5.1
1,1-Dichloroethene	AVRG		0.23719959		9.4
cis-1,2-Dichloroethene	AVRG		0.36055185		6.8
	1-				

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

			COEFFICENTS		%RSD
COMPOUND	CURVE	A0	A1	A2	OR R^2
COMPOOND	= ====				
1,2-Dichloroethene(total)_	AVRG		0.30975638		5.9
trans-1,2-Dichloroethene	AVRG		0.25896091		5.2
1,2-Dichloropropane	AVRG		0.30746477		8.4
1,3-Dichloropropane	AVRG		0.92500533		8.0
2,2-Dichloropropane	AVRG		0.41704008		9.2
1,1-Dichloropropene	- AVRG		0.40171491		13.6
cis-1,3-Dichloropropene	AVRG		0.42905979	,	11.2
trans-1,3-Dichloropropene_	LINR	0.0000000	0.85487363		0.997
Ethylbenzene	AVRG		3.31658815		12.1
Ethyl methacrylate	LINR	0.0000000	0.70394267		0.998
Hexachlorobutadiene	AVRG		0.67985507		5.4
2-Hexanone	LINR	0.00000000	0.41901345		0.995
Iodomethane	LINR	0.00000000	0.51839912		0.998
Isopropylbenzene	AVRG		2.72467361		11.4
p-Isopropyltoluene	AVRG		2.60106959		9.6
Methyl acetate	AVRG		0.17290943		10.0
Methyl cyclohexane	AVRG		0.46797921		9.5
Methylene chloride		0.00000000	2.94325149	0.63578538	0.998
Methyl methacrylate	LINR	0.00000000			0.999
4-Methyl-2-pentanone	AVRG		0.20599337		11.5
MTBE	AVRG	***************************************	0.44857601		7.0
Naphthalene	AVRG		1.79270322		11.5
n-Propylbenzene	AVRG		3.67059246		11.5
Styrene	20RDR	0.00000000	0.43162839	1.456e-002	0.998
1,1,1,2-Tetrachloroethane	AVRG	•	0.74283743		8.1
1,1,2,2-Tetrachloroethane	AVRG		0.71598392		5.2
Tetrachloroethene	AVRG		0.98088101		11.3
Tetrahydrofuran	LINR	0.00000000	5.376e-002		1.000
Toluene	AVRG		1.76055311		7.5
1,2,3-Trichlorobenzene	- AVRG		0.99252560		6.8
1,2,4-Trichlorobenzene	AVRG		1.11556143		7.3
1,1,1-Trichloroethane	AVRG		0.42292084		5.8
1,1,2-Trichloroethane	AVRG		0.52513858		10.2
Trichloroethene	AVRG	***************************************	0.32005131		6.8
Trichlorotrifluoroethane	AVRG		0.28745575		7.3
Trichlorofluoromethane	- AVRG		0.44415423		7.4
1,2,3-Trichloropropane	AVRG		0.16530343		6.1
1,2,3-111CIIIOTOPTOPORC	-				

Lab Name: EMPIRICAL LABS Contract:

Lab Code:

Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5

Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

	1		COEFFICENTS	_	%RSD
COMPOUND	CURVE	A0	A1	A2	OR R^2
	=====				========
1,2,4-Trimethylbenzene	AVRG		2.49443663		7.3
1,3,5-Trimethylbenzene	AVRG		2.45476551		8.1
Vinyl acetate	AVRG		0.43517186		14.9
Vinyl chloride	20RDR	0.00000000	2.46148664	<u> </u>	1.000
m,p-Xylene	20RDR	0.00000000	0.21241081	1.61e-002	0.999
Xylene(total)	20RDR	0.00000000	8.17e-002	2.704e-003	0.999
Di-Isopropyl Ether	AVRG		1.06658300		9.1
ETBE	AVRG		0.71078471		13.4
tert-Amyl Methyl Ether	AVRG		0.60852190		8.6
	=====				
Dibromofluoromethane	AVRG		0.33611443		3.5
1,2-Dichloroethane-d4	AVRG		4.804e-002		5.2
Toluene-d8	AVRG		2.22430730		4.3
Bromofluorobenzene	AVRG		0.89721421		3.8
DIOMOTIGOTOS					

Data File: \\ELABNSH05\TARGET\chem\voa5.i\051209V5.b\V5ICVAP9.D

Report Date: 15-May-2009 09:43

Empirical Laboratories, LLC

RECOVERY REPORT

Client Name:

Sample Matrix: SOLID

Client SDG: SDGa77461

Fraction: VOA

Client Smp ID: V5BLK0512LCS

Lab Smp Id: V5BLK0512LCS

Operator: ADM

Level: LOW Data Type: MS DATA

SampleType: LCS

SpikeList File: c2nds5ap9.spk Quant Type: ICS
SpikeList File: gm-allap9.sub
Sublist File: \(\text{LABNSH05} \text{TARGET\chem\voa5.i\051209V5.b\VSOIL5.m} \)
Misc Info: ;3;LCS;;;gm-allap9.sub;09D0689,09D0588

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
10 Acetonitrile 23 Allyl chloride 31 Propionitrile 34 Chloroprene 39 Methacrylonitrile 47 Isobutyl alcohol 66 1,4-Dioxane 98 trans-1,4-Dichloro \$ 46 Dibromofluorometha \$ 50 1,2-Dichloroethane \$ 77 Toluene-d8 \$ 101 Bromofluorobenzene	500.0 50.00 500.0 50.00 500.0 1000 1000	586.8 58.57 566.7 61.33 540.0 1029 903.4 38.66 36.00 35.64 30.94 30.67	117.36 117.14 113.34 122.66 108.00 102.90 90.34 77.32 120.00 118.80 103.13 102.23	75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 46 Dibromofluorometha	30.00	36.00	120.00	80-125
\$ 50 1,2-Dichloroethane	30.00	35.64	118.80	75-140
\$ 77 Toluene-d8	30.00	30.94	103.13	80-120
\$ 101 Bromofluorobenzene	30.00	30.67	102.23	80-125

VOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date: 10/02/09 Time: 1327

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	RRF	RRF50	CURVE AMOUNT	CCAL AMOUNT	1	CURVE	%D	MAX %D
Acetone	0.104	0.083	100.0	94.49		LINR	-5.5	1
Acrolein	0.031	0.028	250.0			AVRG	-10.2	25.0
Acrylonitrile	0.062	0.052	250.0	211.5		AVRG	-15.4	25.0
Benzene	1.160	1.163	50.00	50.15		AVRG	0.3	25.0
Bromobenzene	0.939	0.871	50.00	46.37		AVRG	-7.2	25.0
Bromochloromethane	0.184	0.173	50.00	46.99		AVRG	-6.0	25.0
Bromodichloromethane	0.386	0.383	50.00	49.60		AVRG	-0.8	25.0
Bromoform	0.474	0.440		46.30	0.100	AVRG	-7.4	25.0
Bromomethane	0.266	0.261	50.00	49.01		AVRG	-2.0	25.0
2-Butanone	0.114	0.110	100.0	92.17		LINR	-7.8	25.0
n-Butylbenzene	2.796	2.654	50.00	47.46		AVRG	-5.1	25.0
sec-Butylbenzene	3.440	3.374	50.00	49.04	İ	AVRG	-1.9	25.0
tert-Butylbenzene	2.152	2.014	50.00	46.81		AVRG	-6.4	25.0
Carbon disulfide	0.833	0.914	50.00	54.90		AVRG	9.8	25.0
Carbon tetrachloride	0.388		√50.00 l	50.83		AVRG	1.7	25.0
Chlorobenzene	2.149	2.074	50.00	48.26	0.300	AVRG	-3.5	25.0
Chloroethane	0.171	0.178	50.00	51.98		AVRG	4.0	25.0
2-Chloroethyl vinyl ether	0.088	0.109	100.0	106.7		LINR	6.7	25.0
Chloroform	0.608	0.554	50.00	45.56		AVRG	-8.9	25.0
1-Chlorohexane	1.118	1.181	50.00	52.84		AVRG	5.7	25.0
Chloromethane	0.383	0.418	50.00	54.50	0.100	AVRG	9.0	25.0
2-Chlorotoluene	2.234	2.178	50.00	48.74		AVRG	-2.5	25.0
4-Chlorotoluene	2.150	2.109	50.00	49.04		AVRG	-1.9	
Cyclohexane	0.479	0.524	50.00	54.65		AVRG	9.3	25.0
Dibromochloromethane	0.800	0.834	50.00	52.08		AVRG		25.0
1,2-Dibromo-3-chloropropane	0.132	0.113	50.00	42.75		AVRG	-14.5	25.0
1,2-Dibromoethane	0.665	0.630	50.00	47.36		AVRG	-5.3	25.0
Dibromomethane	0.187	0.172	50.00	45.98		AVRG	-8.0	25.0
1,2-Dichlorobenzene_	1.554	1.490	50.00	47.94		AVRG	-4.1	25.0
1,3-Dichlorobenzene	1.719	1.588	50.00	46.18		AVRG	-7.6	25.0
t-Butyl alcohol	0.017	0.017	250.0	247.2		AVRG	-1.1	25.0
1,4-Dichlorobenzene	1.756	1.632	50.00	46.48		AVRG	-7.0	25.0
Dichlorodifluoromethane	0.359	0.430	50.00	59.91		AVRG	19.8	
1,1-Dichloroethane	0.458	0.433	50.00	47.23	0.100	AVRG	-5.5	
1,2-Dichloroethane	0.342	0.335	50.00	48.99		AVRG	-2.0	
1,1-Dichloroethene	0.237	0.238	50.00	50.19		AVRG		25.0
cis-1,2-Dichloroethene	0.360	0.352	50.00	48.80		AVRG	-2.4	

page 1 of 3

ICV VOA

VOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date: 10/02/09 Time: 1327

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUNTS	RRF	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
COMPOUND		1	1	AMOUNT	1	=====	%D =====	%D ====
1,2-Dichloroethene(total)	0.310	0.304	100.0	98.07	j	AVRG	-2.0	25.0
trans-1,2-Dichloroethene	0.259	0.255	50.00		1	AVRG	-1.5	
1,2-Dichloropropane	0.308	0.327	50.00	53.25		AVRG	6.5	
1,3-Dichloropropane	0.925	0.909	50.00			AVRG		25.0
2,2-Dichloropropane	0.417	0.399	50.00	47.80	ļ	AVRG	-4.4	1
1,1-Dichloropropene	0.401	0.422	50.00	52.56		AVRG		25.0
1,1-Dichioropropere	0.429	0.437	50.00	50.88		AVRG		25.0
cis-1,3-Dichloropropene	0.806	0.889	50.00	52.02		LINR		25.0
trans-1,3-Dichloropropene	3.316	3.598	50.00			AVRG		25.0
Ethylbenzene	0.649	0.672	50.00	47.72		LINR		25.0
Ethyl methacrylate	0.680	0.721	50.00	53.05		AVRG		25.0
Hexachlorobutadiene	0.396	0.721	100.0	106.0		LINR		25.0
2-Hexanone	$\begin{bmatrix} 0.396 \\ 0.477 \end{bmatrix}$	0.554	50.00			LINR		25.0
Iodomethane	2.725	3.364	50.00	61.74		AVRG	23.5	
Isopropylbenzene	2.601		50.00	52.91		AVRG		25.0
p-Isopropyltoluene	. 1	2.753	50.00	46.88				25.0
Methyl acetate	0.173	0.162	50.00			AVRG		
Methyl cyclohexane	0.468	0.464		49.58		AVRG		25.0
Methylene chloride	0.401	0.266	50.00	42.91		20RDR	-14.2	
Methyl methacrylate	0.160	0.164	50.00	42.89		LINR	-14.2	
4-Methyl-2-pentanone	0.206	0.212	100.0	102.8	ŀ	AVRG		25.0
MTBE	0.448	0.395	50.00	44.01		AVRG	-12.0	
Naphthalene	1.793	1.638	50.00	45.68		AVRG		25.0
n-Propylbenzene	3.670	3.308	50.00	45.05		AVRG	-9.9	
IStvrene	1.905	2.232	50.00	54.20		20RDR		25.0
1,1,1,2-Tetrachloroethane	0.743	0.795	50.00	53.53		AVRG		25.0
1,1,2,2-Tetrachloroethane	0.716	0.643		44.90	0.300		-10.2	
Tetrachloroethene	0.981	0.964	50.00	49.14		AVRG		25.0
Tetrahydrofuran	0.055	0.047	50.00	44.11		LINR	-11.8	
Toluene	1.760	1.816	50.00	51.57		AVRG	3.1	25.0
1,2,3-Trichlorobenzene	0.992	0.890	50.00	44.84		AVRG	-10.3	
1,2,4-Trichlorobenzene	1.115	1.034	50.00	46.34		AVRG		25.0
1,1,1-Trichloroethane	0.423	0.393	50.00	46.44		AVRG	-7.1	
1,1,2-Trichloroethane	0.525	0.483	50.00	45.97		AVRG	-8.0	
Trichloroethene	0.320	0.320	50.00	50.02		AVRG	0.0	
Trichlorotrifluoroethane	0.287	0.304	50.00	52.90		AVRG	5.8	
Trichlorofluoromethane	0.444	0.468	50.00	52.66		AVRG	5.3	
1,2,3-Trichloropropane	0.165	0.156	50.00	47.07		AVRG	-5.9	25.0

page 2 of 3

ICV VOA

VOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date: 10/02/09 Time: 1327

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

			CURVE	CCAL	MIN			MAX
COMPOUND	RRF	RRF50	AMOUNT	AMOUNT	RRF	CURVE	%D	%D
	_=====	=====	======	=====	=====	=====	=====	====
1,2,4-Trimethylbenzene	2.494	2.538	50.00	50.88		AVRG	1.8	25.0
1,3,5-Trimethylbenzene	2.454	2.389	50.00	48.66		AVRG	-2.7	25.0
Vinyl acetate	0.435	0.443	100.0	101.8		AVRG	1.8	25.0
Vinyl chloride	0.314	0.349	50.00	51.14		20RDR	2.3	25.0
Xylene(total)	7.794	7.760	150.0	138.8		20RDR	-7.5	25.0
Di-Isopropyl Ether	1.066	1.081	50.00	50.69		AVRG	1.4	25.0
ETBE	0.711	0.774	50.00	54.48		AVRG	9.0	25.0
tert-Amyl Methyl Ether	0.608	0.569	50.00	46.76		AVRG	-6.5	25.0
	=====	=====	=====	=====		=====	=====	====
Dibromofluoromethane	0.336	0.342	30.00	30.50		AVRG	1.7	25.0
1,2-Dichloroethane-d4	0.048	0.045	30.00	28.10		AVRG	-6.3	25.0
Toluene-d8	2.224	2.376	30.00	32.04		AVRG	6.8	25.0
Bromofluorobenzene	0.897	0.910	30.00	30.43		AVRG	1.4	25.0

FORM 7 VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Instrument ID: VOA5 Calibration Date: 12/02/09 Time: 1152

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOLIND	RRF	RRF100	CURVE AMOUNT	CCAL	MIN RRF	CURVE	%D	MAX %D
COMPOUND	======	=====	ANOON :			=====		====
Acetone	0.104	0.088	200.0	199.1		LINR	-0.5	
Acrolein	0.031	0.024	500.0			AVRG	-22.0	
Acrylonitrile	0.062	0.049	500.0			AVRG	-20.7	
Benzene	1.160	1.071	100.0	92.37		AVRG	-7.6	
Bromobenzene	0.939	0.832	100.0			AVRG	-11.4	
Bromochloromethane	0.184	0.172	100.0			AVRG	-6.6	
Bromodichloromethane	0.386	0.403	100.0			AVRG	4.4	
Bromoform	0.474	0.469	100.0		0.100		-1.2	
Bromomethane	0.266	0.306	100.0			AVRG	14.9	
2-Butanone	0.114	0.133	200.0			LINR	11.0	
n-Butylbenzene	2.796	2.573	100.0	ł		AVRG	-8.0	
sec-Butylbenzene	3.440	3.105	100.0			AVRG	-9.7	
tert-Butylbenzene	2.152	1.943	100.0			AVRG	-9.7	
Carbon disulfide	0.833	0.749	100.0			AVRG	-10.0	
Carbon tetrachloride	0.388	0.396	100.0			AVRG	2.2	
Chlorobenzene	2.149	1.894	100.0		0.300		-11.9	
Chloroethane	0.171	0.187	100.0	f .		AVRG	8.7	
2-Chloroethyl vinyl ether	0.088	0.113	200.0			LINR	10.6	
Chloroform	0.608	0.565	100.0	1		AVRG	-7.0	20.0
1-Chlorohexane	1.118	2.059	100.0			AVRG	84.2	
Chloromethane	0.383	0.390	100.0		0.100	AVRG	1.8	
2-Chlorotoluene	2.234	2.004	100.0			AVRG	-10.3	
4-Chlorotoluene	2.150	1.917	100.0			AVRG	-10.8	
Cyclohexane	0.479	0.483	100.0			AVRG	0.8	
Dibromochloromethane	0.800	0.758	100.0			AVRG	-5.4	
1,2-Dibromo-3-chloropropane_	0.132	0.121	100.0			AVRG	-8.6	
1,2-Dibromoethane	0.665	0.647	100.0			AVRG	-2.7	
Dibromomethane	0.187	0.187	100.0	!		AVRG	0.1	
1,2-Dichlorobenzene	1.554	1.354	100.0			AVRG	-12.9	
1,3-Dichlorobenzene	1.719	1.474	100.0	1		AVRG	-14.3	
t-Butyl alcohol	0.017	0.018	500.0			AVRG	3.4	
1,4-Dichlorobenzene	1.756	1.580	100.0			AVRG	-10.0	
Dichlorodifluoromethane	0.359	0.367	100.0	1		AVRG	2.3	
1,1-Dichloroethane	0.458	0.453	100.0	ł	0.100		-1.1	
1,2-Dichloroethane	0.342	0.328	100.0			AVRG	-4.0	
1,1-Dichloroethene	0.237	0.326	100.0			AVRG		20.0
cis-1,2-Dichloroethene	0.360	0.340	100.0			AVRG	-5.8	
							<u> </u>	l

page 1 of 3

FORM 7 . VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Instrument ID: VOA5 Calibration Date: 12/02/09 Time: 1152

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	RRF	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
=======================================								====
1,2-Dichloroethene(total)	0.310	0.294	200.0	190.0		AVRG	-5.1	
trans-1,2-Dichloroethene	0.259	0.248	100.0	95.77		AVRG	-4.2	
1,2-Dichloropropane	0.308	0.314	100.0	102.2		AVRG	2.2	20.0
1,3-Dichloropropane	0.925	0.860	100.0	92.92		AVRG	-7.1	
2,2-Dichloropropane	0.417	0.408	100.0	97.76		AVRG	-2.2	
1,1-Dichloropropene	0.401	0.422	100.0	105.2		AVRG	5.2	
cis-1,3-Dichloropropene	0.429	0.439	100.0	102.2		AVRG	2.2	
trans-1,3-Dichloropropene	0.806	0.817	100.0	95.61		LINR	-4.4	
Ethylbenzene	3.316	3.192	100.0	96.25		AVRG	-3.8	20.0
Ethyl methacrylate	0.649	0.662	100.0	94.10		LINR	-5.9	
Hexachlorobutadiene	0.680	0.644	100.0	94.70		AVRG	-5.3	
2-Hexanone	0.396	0.437	200.0	208.7		LINR	4.3	
Iodomethane	0.477	0.548	100.0	105.7		LINR	5.7	
Isopropylbenzene	2.725	2.674	100.0	98.15		AVRG	-1.8	
p-Isopropyltoluene	2.601	2.330	100.0	89.58		AVRG	-10.4	
Methyl acetate	0.173	0.119	100.0	68.75		AVRG	-31.2	
Methyl cyclohexane	0.468	0.477	100.0	102.0		AVRG	2.0	
Methylene chloride	0.401	0.257	100.0	89.80		20RDR	-10.2	
Methyl methacrylate	0.160	0.205	100.0	107.6		LINR	7.6	
4-Methyl-2-pentanone	0.206	0.254	200.0	246.9		AVRG	23.5	
MTBE	0.448	0.451	100.0	100.6		AVRG	0.6	
Naphthalene	1.793	1.608	100.0	89.71		AVRG	-10.3	
n-Propylbenzene	3.670	3.274	100.0	89.19		AVRG	-10.8	
Styrene	1.905	1.994	100.0	105.4		20RDR	5.4	
1,1,1,2-Tetrachloroethane	0.743	0.740	100.0	99.65		AVRG	-0.4	
1,1,2,2-Tetrachloroethane	0.716	0.621	100.0	86.70	0.300	AVRG	-13.3	
Tetrachloroethene	0.981	0.899	100.0	91.62		AVRG	-8.4	
Tetrahydrofuran	0.055	0.055	100.0	102.4		LINR	2.4	
Toluene	1.760	1.678	100.0	95.34		AVRG		20.0
1,2,3-Trichlorobenzene	0.992	0.914	100.0	92.07		AVRG	-7.9	
1,2,4-Trichlorobenzene	1.115	1.035	100.0	92.79		AVRG	-7.2	
1,1,1-Trichloroethane	0.423	0.416	100.0	98.44		AVRG	-1.6	
1,1,2-Trichloroethane	0.525	0.491	100.0	93.52		AVRG	-6.5	
Trichloroethene	0.320	0.315	100.0	98.39		AVRG	-1.6	
Trichlorotrifluoroethane	0.287	0.272	100.0	94.66		AVRG	-5.3	
Trichlorofluoromethane	0.444	0.448	100.0	100.8		AVRG	0.8	
1,2,3-Trichloropropane	0.165	0.155	100.0	94.00		AVRG	-6.0	
						l		l

page 2 of 3

FORM 7 VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Instrument ID: VOA5 Calibration Date: 12/02/09 Time: 1152

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	RRF	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Vinyl acetate Vinyl chloride Xylene(total) Di-Isopropyl Ether ETBE tert-Amyl Methyl Ether	2.494 2.454 0.435 0.314 7.794 1.066 0.711 0.608	0.326 0.294 7.016 1.162 0.830	i	149.9 95.65 302.3 109.0 116.8	====	AVRG AVRG AVRG 2ORDR 2ORDR AVRG AVRG AVRG AVRG AVRG	-9.3 -10.6 -25.0 -4.3 0.8 9.0 16.8 6.5	20.0
Dibromofluoromethane 1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	0.336 0.048 2.224 0.897		30.00 30.00 30.00 30.00	30.93 30.09 28.96 28.96		AVRG AVRG AVRG AVRG	3.1 0.3 -3.5 -3.5	

page 3 of 3

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.V11230

Instrument ID: VOA5 Calibration Date: 12/08/09 Time: 1618

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 05/12/09 05/12/09

Heated Purge: (Y/N) Y Init. Calib. Times: 1512 1851

GC Column: RTX-VRX ID: 0.25 (mm)

			CURVE	CCAL	MIN			MAX	
COMPOUND	RRF	RRF100	AMOUNT	AMOUNT	RRF	CURVE	%D	%D	
				=		=====	=====		
Acetonitrile	0.050	0.156	1000	3143		AVRG	214.3	20.0	
Allyl chloride	0.186	0.124	100.0	66.48		AVRG	-33.5	20.0	
Chloroprene	0.436	0.439	100.0	100.5		AVRG	0.5	20.0	
cis-1,4-Dichloro-2-butene	0.118	0.198	100.0	123.5		LINR	23.5	20.0	
trans-1,4-Dichloro-2-butene	0.134	0.224	100.0	118.1		LINR	18.1	20.0	
1,4-Dioxane	0.000	0.002	2000	3485		20RDR	74.2	20.0	+
Hexane	0.563	0.523	100.0	92.91		AVRG	-7.1	20.0	
Isobutyl alcohol	0.005	0.009	2000	3336		LINR	66.8	20.0	
Methacrylonitrile	0.099	0.156	1000	1432		LINR	43.2	20.0	
	0.020	0.019	1000	945.7		AVRG	-5.4	20.0	
Propionitrile	0.020	0.010	2000						
							l	· ——	

FORM VII VOA

FORM 1 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NBG-BACKFILL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1123001

% Moisture: 16 decanted: (Y/N) N Date Sampled: 11/24/09 15:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/30/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 17:10

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CAS NO.	CONCENTRA! COMPOUND	TION UNITS:	(ug/L or RL	ug/Kg) UG/KG CONC Q	
3.1.					
02.20.0	Agonaphthono	32	400	U	
83-32-9	Acenaphthene	23	400	Ü	
208-96-8	Acenaphthylene	49	400	lΰ	
98-86-2	Acetophenone	34	400	lΰ	
1912-24-9	ALIAZINE	32	400	lΰ	
120-12-7	Anthracene	66	400	lΰ	
100-52-7	Benzaldehyde		160	Ü	
56-55-3	Benzo (a) anthracene	44	160	Ū	
	Benzo (b) fluoranthene	38	400	Ü	
	Benzo(k) fluoranthene	47		U	
	Benzo(g,h,i)perylene	84 27	400 160	l n	
	Benzo(a) pyrene	1	i i	υ	
92-52-4	1,1'-Biphenyl	35	400		
111-91-1	bis(2-Chloroethoxy)methane	37	400	U	
111-44-4	bis(2-Chloroethyl)ether	49	400	U	
108-60-1	bis(2-Chloroisopropyl)ether_	61	400	U	
117-81-7	Bis(2-ethylhexyl)phthalate	43	400	Ū	
101-55-3	4-Bromophenyl-phenylether	31	400	ļū	
85-68-7	Butylbenzylphthalate	36	400	U	
105-60-2	Caprolactam	80	400	U	
86-74-8	Carbazole	43	400	U	
	4-Chloroaniline	57	400	U	
59-50-7	4-Chloro-3-methylphenol	33	400	U	
91-58-7	2-Chloronaphthalene	38	400	U	
95-57-8	2-Chlorophenol	49	400	U	
7005-72-3	4-Chlorophenyl-phenylether_	37	400	U	
218-01-9	Chrysene	37	400	U	
53-70-3	Dibenz (a, h) anthracene	72	160	U	
132-64-9	Dibenzofuran	29	400	U	
	3,3'-Dichlorobenzidine	38	400	U	
	2,4-Dichlorophenol	22	400	U	
84-66-2	Diethylphthalate	40	400	U	
105-67-9	2,4-Dimethylphenol	26	1600	U	
131-11-3	Dimethylphthalate	36	400	U	
	-				

CLIENT SAMPLE NO.

NBG-BACKFILL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1123001

% Moisture: 16 decanted: (Y/N) N Date Sampled: 11/24/09 15:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/30/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 17:10

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

Get Cicanap.	(1)11) 11				
CAS NO.	CONCENTRA COMPOUND	TION UNITS: MDL	(ug/L or RL	ug/Kg) UC CONC	G/KG Q
CAS NO. 84-74-2 534-52-1 51-28-5 121-14-2 606-20-2 117-84-0 86-73-7 118-74-1 87-68-3 77-47-4 193-39-5 193-39-5 91-57-6 91-20-3	COMPOUND Di-n-butylphthalate4,6-Dinitro-2-methylphenol2,4-Dinitrophenol2,4-Dinitrotoluene2,6-DinitrotolueneDi-n-octylphthalateFluorantheneFluoreneHexachlorobenzeneHexachlorobutadieneHexachlorocyclopentadieneHexachlorocyclopentadieneHexachloroethaneIndeno(1,2,3-cd)pyreneIsophorone2-MethylnaphthaleneNaphthalene2-Methylphenol4-Methylphenol2-Nitroaniline3-Nitroaniline4-Nitrobenzene2-Nitrophenol4-Nitrophenol4-Nitrosodiphenylamine (1)	MDL 36 26 160 29 45 32 64 31 42 39 73 47 55 34 42 39 46 32 38 56 120 41 26 97 38	400 1600 1600 400 400 400 400 400 400 400 400 400		ממממממממ ממממממממממ
621-64-7 87-86-5 108-95-2 129-00-0 95-94-3 95-95-4	N-Nitroso-di-n-propylamine Pentachlorophenol Phenol	66 40 43 48 120 32 42	400 1600 400 400 400 400 400	210	U U U U U U U U

(1) - Cannot be separated from Diphenylamine

FORM 1 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NBG-TOPSOIL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-02

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1123002

% Moisture: 22 decanted: (Y/N) N Date Sampled: 11/24/09 14:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/30/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 17:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CAS NO.	CONCENTRA COMPOUND	TION UNITS MDL	: (ug/L or RL	r ug/Kg) U CONC	G/KG Q
208-96-8 98-86-2 1912-24-9 120-12-7 100-52-7 56-55-3 205-99-2 207-08-9 191-24-2 50-32-8 92-52-4 111-91-1 111-44-4 108-60-1 117-81-7 101-55-3 85-68-7 105-60-2 86-74-8 106-47-8 91-58-7 91-58-7 91-58-7 91-58-7 91-58-7 91-58-7 91-58-7 91-58-7 91-94-1 120-83-2 84-66-2 105-67-9	-Anthracene -Benzaldehyde -Benzo (a) anthracene -Benzo (b) fluoranthene -Benzo (k) fluoranthene -Benzo (g,h,i) perylene -Benzo (a) pyrene -1,1'-Biphenyl -bis (2-Chloroethoxy) methane -bis (2-Chloroethyl) ether -bis (2-Chloroisopropyl) ether -Bis (2-ethylhexyl) phthalate -4-Bromophenyl-phenylether -Butylbenzylphthalate -Caprolactam -Carbazole -4-Chloroaniline -4-Chloroaniline -2-Chlorophenol -2-Chlorophenol -4-Chlorophenyl-phenylether -Chrysene -Dibenz (a,h) anthracene	34 52 36 31 40 30 31 40 50 31 40 50 40 40 40 40 40 40 40 40 40 40 40 40 40	430 430 430 430 430 170 170 170 430 430 430 430 430 430 430 430 430 43	140	מממממממממממממממממממממממממממממ

FORM I SV

0911230 ORG Summ 52

FORM 1 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NBG-TOPSOIL

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix: (soil/water) SOIL Lab Sample ID: 0911230-02

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1123002

% Moisture: 22 decanted: (Y/N) N Date Sampled: 11/24/09 14:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/30/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 17:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CAS NO.	CONCENTRA COMPOUND	TION UNITS MDL	: (ug/L or RL	c ug/Kg) U CONC	G/KG Q
84-74-2 534-52-1 51-28-5 121-14-2 606-20-2 117-84-0 86-73-7 118-74-1 87-68-3 77-47-4 193-39-5 193-39-5 91-20-3	-Di-n-butylphthalate -4,6-Dinitro-2-methylphenol -2,4-Dinitrophenol -2,4-Dinitrotoluene -2,6-Dinitrotoluene -Di-n-octylphthalate -Fluoranthene -Fluorene -Hexachlorobenzene -Hexachlorobutadiene -Hexachlorocyclopentadiene -Hexachlorocyclopentadiene -Hexachloroethane -Indeno(1,2,3-cd)pyrene -Isophorone -2-Methylnaphthalene -Naphthalene -2-Methylphenol -4-Methylphenol -2-Nitroaniline -3-Nitroaniline -4-Nitroaniline -Nitrobenzene -2-Nitrophenol -4-Nitrosodiphenylamine (1) -N-Nitroso-di-n-propylamine -Pentachlorophenol -Phenol	39 28 170 31 48 34 68 33 44 42 78 50 59 36 41 49 34 41 60 130 41 70 43 46 51 130 34	430 1700 1700 430 430 430 430 430 430 430 430 430 4	2900 480	ממרמממממממממ ממממממממממממ
88-06-2	-2,4,6-Trichlorophenol	44	430		U

(1) - Cannot be separated from Diphenylamine

FORM 2 SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (2FP)#	S2 (PHL)#	S3 (NBZ) #	S4 (FBP)#	S5 (TBP)#	S6 (TPH)#	S7 #	S8 #	TOT
	==========	======	======	(1004)#	(LDL)#		(1511/#	======	# ======	===
01	9K30917-BLK1	55	65	62	83	67	87			0
02	9K30917-BLK1	56	58	66	77	77	83			ő
03	NBG-BACKFILL	54	58	72	83	78	78			0
04	NBG-TOPSOIL	52	55	65	69	66	73			0
05	NBG-TOPSOILM	54	57	67	80	77	85			0
06	NBG-TOPSOILM	52	58	62	76	72	84			0
07 08						***************************************	***************************************		***************************************	
09									···	
10										
11								***************************************		
12										
13										
14 15							***************************************			
16										
17				***************************************			***************************************			
18							***************************************			
19										
20 21										
21										
22 23 24 25 26 27										
23										
25										
26										
27									***************************************	
28						<u> </u>				
29										
30										

				EL	SPIKE
				QC LIMITS	CONC (UG/KG)
S1	(2FP)	_	2-Fluorophenol	(35-105)	6700
S2	(PHL)	==	Phenol-d6	(40-100)	6700
S3	(NBZ)		Nitrobenzene-d5	(35-100)	3300
S4	(FBP)	=	2-Fluorobiphenyl	(45-105)	3300
			2,4,6-Tribromophenol	(35-125)	6700
S6	(TPH)	=	Terphenyl-d14	(30-125)	3300

page 1 of 1

FORM II SV

[#] Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 3 SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix Spike - Client Sample No.: 9K30917-BLK1 Level:(low/med) LOW

COMPOUND ===================================	SPIKE ADDED (UG/KG) ====== 3333 3333 3333	SAMPLE CONCENTRATION (UG/KG) ========= 0.0000 0.0000	LCS CONCENTRATION (UG/KG) ====================================	LCS % REC # ===== 85	QC. LIMITS REC.
======================================	(UG/KG) ======= 3333 3333 3333	(UG/KG) ======= 0.0000	(UG/KG) ======== 2849	REC #	REC.
======================================	3333 3333 3333 3333	0.0000	2849		
Acenaphthylene	3333 3333				
Acenaphthylene	3333 3333				
	3333	0.0000			45-110
Acetophenone			3016	90	45-105
		0.0000	1768	53	35-110
Atrazine	3333	0.0000	3033	91	55-105
Anthracene	3333	0.0000	2552	76	55-105
Benzaldehyde	3333	0.0000	985.6	30	10-160
Benzo (a) anthracene	3333	0.0000	3100	93	50-110
Benzo(b) fluoranthene	3333	0.0000	3301	99	45-115
Benzo(k)fluoranthene	3333	0.0000	3162	95	45-125
Benzo(g,h,i)perylene	3333	0.0000	3940	118	40-125
Benzo(a)pyrene	3333	0.0000	2678	80	50-110
1,1'-Biphenyl	3333	0.0000	2641	79	45-110
bis(2-Chloroethoxy)meth	3333	0.0000	2565	77	45-110
bis(2-Chloroethyl)ether	3333	0.0000	2362	71	40-105
bis(2-Chloroisopropyl)e	3333	0.0000	1502	45	20-115
Bis(2-ethylhexyl)phthal	3333	0.0000	2891	87	45-125
4-Bromophenyl-phenyleth	3333	0.0000	2890	87	45-115
Butylbenzylphthalate	3333	0.0000	3048	91	50-125
Caprolactam	3333	0.0000	3947	118*	50-110
Carbazole	3333	0.0000	2845	85	45-115
4-Chloroaniline	3333	0.0000	2591	78	10- 95
4-Chloro-3-methylphenol	3333	0.0000	2851	86	45-115
2-Chloronaphthalene	3333	0.0000	2690	81	45-105
2-Chlorophenol	3333	0.0000	2489	75	45-105
4-Chlorophenyl-phenylet	3333	0.0000	2843	85	45-110
Chrysene	3333	0.0000	3006	90	55-110
Dibenz(a,h)anthracene	3333	0.0000	3746	112	40-125
Dibenzofuran	3333	0.0000	2644	79	50-105

# (Column	to	be	used	to	flag	recovery	and	RPD	values	with	an	asterisk	ζ
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COMMENTS:	

page 1 of 3

FORM III SV

^{*} Values outside of QC limits

FORM 3 SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix Spike - Client Sample No.: 9K30917-BLK1 Level: (low/med) LOW

	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
COMPOUND	(UG/KG)	(UG/KG)	(UG/KG)	REC #	REC.
3,3'-Dichlorobenzidine	3333	0.0000	2835	85	19-130
2,4-Dichlorophenol	3333	0.0000	2883	86	45-110
Diethylphthalate	3333	0.0000	3106	93	50-115
2,4-Dimethylphenol	3333	0.0000	2666	80	30-105
Dimethylphthalate	3333	0.0000	3216	96	50-110
Di-n-butylphthalate	3333	0.0000	2774	83	55-110
4,6-Dinitro-2-methylphe	3333	0.0000	3491	105	30-135
2,4-Dinitrophenol	3333	0.0000	3706	111	15-130
2,4-Dinitrotoluene	3333	0.0000	2805	84	50-115
2,6-Dinitrotoluene	3333	0.0000	3389	102	50-110
Di-n-octylphthalate	3333	0.0000	2935	88	40-130
Fluoranthene	3333	0.0000	3076	92	55-115
Fluorene	3333	0.0000	2922	88	50-110
Hexachlorobenzene	3333	0.0000	3173	95	45-120
Hexachlorobutadiene	3333	0.0000	2813	84	30-110
Hexachlorocyclopentadie	3333	0.0000	2186	66	10-110
Hexachloroethane	3333	0.0000	2203	66	35-110
Indeno (1,2,3-cd) pyrene	3333	0.0000	3699	111	40-120
Isophorone	3333	0.0000	2446	73	45-110
2-Methylnaphthalene	3333	0.0000	2694	81	40-110
Naphthalene	3333	0.0000	2515	75	40-105
2-Methylphenol	3333	0.0000	2316	69	40-105
4-Methylphenol	3333	0.0000	2080	62	40-105
2-Nitroaniline	3333	0.0000	2130	64	45-120
3-Nitroaniline	3333	0.0000	3148	94	25-110
4-Nitroaniline	3333	0.0000	3248	97	35-115
Nitrobenzene	3333	0.0000	2373	71	40-115
2-Nitrophenol	3333	0.0000	3164	95	40-110

COMMENTS:	

page 2 of 3

FORM III SV

[#] Column to be used to flag recovery and RPD values with an asterisk \star Values outside of QC limits

FORM 3 SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix Spike - Client Sample No.: 9K30917-BLK1 Level: (low/med) LOW

	SPIKE	SAMPLE	LCS	LCS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	₽EC #	REC.
COMPOUND	(UG/KG)	(UG/KG)	(UG/KG)	REC #	REC.
4-Nitrophenol	3333	0.0000	1993	60	15-140
N-Nitrosodiphenylamine	3333	0.0000	2656	80	50-115
N-Nitroso-di-n-prop.(1)	3333	0.0000	1780	53	40-115
Pentachlorophenol	3333	0.0000	2845	85	25-120
Phenol	3333	0.0000	2154	65	40-100
Pyrene	3333	0.0000	3004	90	45-125
1,2,4,5-Tetrachlorobenz	3333	0.0000	2551	76	50-150
2,4,5-Trichlorophenol	3333	0.0000	3041	91	50-110
2,4,6-Trichlorophenol	3333	0.0000	2672	80	45-110
·					

⁽¹⁾ N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk * Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 65 outside limits

COMMENTS:	

page 3 of 3

FORM III SV

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Case No.: NA SAS No.: NA SDG No.: ARC.B11230 Lab Code: NA

Matrix Spike - Client Sample No.: NBG-Topsoil Lab Sample ID: 0911230-02

Level: (low/med) LOW

	SPIKE	SAMPLE	MS	MS	QC.
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
COMPOUND	(UG/KG)	(UG/KG)	(UG/KG)	REC #	REC.
				=====	======
Acenaphthene	3945	0.0000	3049	77	45-110
Acenaphthylene	3945	0.0000	3588	91	45-105
Acetophenone	3945	0.0000	2589	66	35-110
Atrazine	3945	0.0000	3362	85	55-105
Anthracene	3945	0.0000	3633	92	55-105
Benzaldehyde	3945	0.0000	1225	31	10-160
Benzo(a) anthracene	3945	0.0000	3994	101	50-110
Benzo(b)fluoranthene	3945	0.0000	3807	96	45-115
Benzo(k)fluoranthene	3945	0.0000	3727	94	45-125
Benzo(g,h,i)perylene	3945	0.0000	5945	151*	40-125
Benzo(a)pyrene	3945	0.0000	3250	82	50-110
1,1'-Biphenyl	3945	0.0000	3422	87	45-110
bis(2-Chloroethoxy)meth	3945	0.0000	3204	81	45-110
bis(2-Chloroethyl)ether	3945	0.0000	3148	80	40-105
bis(2-Chloroisopropyl)e	3945	0.0000	1708	43	20-115
Bis(2-ethylhexyl)phthal	3945	0.0000	3339	85	45-125
4-Bromophenyl-phenyleth	3945	0.0000	2640	67	45-115
Butylbenzylphthalate	3945	0.0000	3445	87	50-125
Caprolactam	3945	0.0000	5754	146*	50-110
Carbazole	3945	0.0000	3408	86	45-115
4-Chloroaniline	3945	0.0000	2889	73	10- 95
4-Chloro-3-methylphenol	3945	0.0000	3060	78	45-115
2-Chloronaphthalene	3945	0.0000	3415	86	45-105
2-Chlorophenol	3945	0.0000	3073	78	45-105
4-Chlorophenyl-phenylet	3945	0.0000	3588	91	45-110
Chrysene	3945	0.0000	3680	93	55-110
Dibenz(a,h)anthracene	3945	0.0000	5328	135*	40-125
Dibenzofuran	3945	141.5	3572	87	50-105

COMMENTS:	

[#] Column to be used to flag recovery and RPD values with an asterisk * Values outside of QC limits

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Case No.: NA SAS No.: NA SDG No.: ARC.B11230 Lab Code: NA

Matrix Spike - Client Sample No.: NBG-Topsoil Lab Sample ID: 0911230-02

Level: (low/med) LOW

	SPIKE ADDED	SAMPLE CONCENTRATION	MS CONCENTRATION	MS %	QC. LIMITS
COMPOUND	(UG/KG)	(UG/KG)	(UG/KG)	REC #	REC.
3,3'-Dichlorobenzidine	3945	0.0000	3264	83	19-130
2,4-Dichlorophenol	3945	0.0000	3796	96	45-110
Diethylphthalate	3945	0.0000	3790	96	50-115
2,4-Dimethylphenol	3945	0.0000	3308	84	30-105
Dimethylphthalate	3945	0.0000	3466	88	50-110
Di-n-butylphthalate	3945	0.0000	3345	85	55-110
4,6-Dinitro-2-methylphe	3945	0.0000	3593	91	30-135
2,4-Dinitrophenol	3945	0.0000	3586	91	15-130
2,4-Dinitrotoluene	3945	0.0000	3460	88	50-115
2,6-Dinitrotoluene	3945	0.0000	2861	72	50-110
Di-n-octylphthalate	3945	0.0000	3080	78	40-130
Fluoranthene	3945	0.0000	3665	93	55-115
Fluorene	3945	0.0000	2940	74	50-110
Hexachlorobenzene	3945	0.0000	3398	86	45-120
Hexachlorobutadiene	3945	0.0000	3896	99	30-110
Hexachlorocyclopentadie	3945	0.0000	2174	55	10-110
Hexachloroethane	3945	0.0000	2530	64	35-110
Indeno(1,2,3-cd)pyrene	3945	0.0000	5370	136*	40-120
Isophorone	3945	0.0000	2790	71	45-110
2-Methylnaphthalene	3945	2933	5197	57	40-110
Naphthalene	3945	479.7	3540	78	40-105
2-Methylphenol	3945	0.0000	2730	69	40-105
4-Methylphenol	3945	0.0000	2528	64	40-105
2-Nitroaniline	3945	0.0000	2559	65	45-120
3-Nitroaniline	3945	0.0000	3066	78	25-110
4-Nitroaniline	3945	0.0000	3442	87	35-115
Nitrobenzene	3945	0.0000	2513	64	40-115
2-Nitrophenol	3945	0.0000	3758	95	40-110

COMMENTS:	

[#] Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

SAS No.: NA SDG No.: ARC.B11230 Case No.: NA Lab Code: NA

Matrix Spike - Client Sample No.: NBG-Topsoil Lab Sample ID: 0911230-02

Level: (low/med) LOW

	SPIKE ADDED	SAMPLE CONCENTRATION	MS CONCENTRATION	MS %	QC. LIMITS
COMPOUND	(UG/KG)	(UG/KG)	(UG/KG)	REC #	REC.
			==========		
4-Nitrophenol	3945	0.0000	1976	50	15-140
N-Nitrosodiphenylamine	3945	0.0000	4026	102	50-115
N-Nitroso-di-n-prop.(1)	3945	0.0000	2233	57	40-115
Pentachlorophenol	3945	0.0000	3740	95	25-120
Phenol	3945	0.0000	2522	64	40-100
Pyrene	3945	179.0	3779	91	45-125
1,2,4,5-Tetrachlorobenz	3945	0.0000	3384	86	50-150
2,4,5-Trichlorophenol	3945	0.0000	3478	88	50-110
2,4,6-Trichlorophenol	3945	0.0000	3264	83	45-110
. ,					

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk * Values outside of QC limits

COMMENTS:	

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix Spike - Client Sample No.: NBG-Topsoil Lab Sample ID: 0911230-02

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC L: RPD	IMITS REC.
		=======================================	=====	======	=====	45 110
Acenaphthene	3945	2964	75	3	30 30	45-110 45-105
Acenaphthylene	3945	3510	89	2 0	30	1
Acetophenone	3945	2575	65			35-110
Atrazine	3945	3154	80	6 5	30	55-105
Anthracene	3945	3445	87		30	55-105
Benzaldehyde	3945	1176	30	4	30	10-160
Benzo (a) anthracene	3945	3741	95	6	30 30	50-110 45-115
Benzo (b) fluoranthene	3945	3644	92 83	4 13	30	45-115
Benzo(k) fluoranthene	3945	3273	130*	13 15	30	45-125
Benzo(g,h,i)perylene	3945	5133	77	7	30	50-110
Benzo (a) pyrene	3945	3036	77	10	30	45-110
1,1'-Biphenyl	3945	3106	79	13	30	45-110
bis (2-Chloroethoxy) meth	3945 3945	2808 2790	71	12	30	40-105
bis(2-Chloroethyl)ether	3945 3945	1630	41	5	30	20-115
bis(2-Chloroisopropyl)e	3945	3316	84	1	30	45-125
Bis(2-ethylhexyl)phthal	3945	2749	70	$\frac{1}{4}$	30	45-115
4-Bromophenyl-phenyleth	3945	3459	88	0	30	50-125
Butylbenzylphthalate	3945	5307	134*	8	30	50-110
Caprolactam Carbazole	3945	3332	84	2	30	45-115
4-Chloroaniline	3945	2428	62	17	30	10- 95
4-Chloro-3-methylphenol	3945	2915	74	5	30	45-115
2-Chloronaphthalene	3945	3085	78	10	30	45-105
2-Chlorophenol	3945	2959	75	4	30	45-105
4-Chlorophenyl-phenylet	3945	3007	76	18	30	45-110
Chrysene	3945	3632	92	1	30	55-110
Dibenz(a,h)anthracene	3945	4882	124	9	30	40-125
Dibenzofuran	3945	3233	78	10	30	50-105
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(1) N-Nitroso-di-n-propylamine

# Column to be used to flag recovery and RPD values with an a	asterisk
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COMMENTS:	

^{*} Values outside of QC limits

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix Spike - Client Sample No.: NBG-Topsoil Lab Sample ID: 0911230-02

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LI RPD	IMITS REC.
3,3'-Dichlorobenzidine	3945	2887	73	12	30	19-130
2,4-Dichlorophenol	3945	3235	82	16	30	45-110
Diethylphthalate	3945	3333	84	13	30	50-115
2,4-Dimethylphenol	3945	3046	77	8	30	30-105
Dimethylphthalate	3945	3267	83	6	30	50-110
Di-n-butylphthalate	3945	3217	82	4	30	55-110
4,6-Dinitro-2-methylphe	3945	3439	87	4	30	30-135
2,4-Dinitrophenol	3945	3735	95	4	30	15-130
2,4-Dinitrotoluene	3945	3296	84	5 5	30	50-115
2,6-Dinitrotoluene	3945	2997	76	5	30	50-110
Di-n-octylphthalate	3945	3189	81	3	30	40-130
Fluoranthene	3945	3545	90	3	30	55-115
Fluorene	3945	3005	76	2	30	50-110
Hexachlorobenzene	3945	3374	86	1	30	45-120
Hexachlorobutadiene	3945	3642	92	7	30	30-110
Hexachlorocyclopentadie	3945	1798	46	19	30	10-110
Hexachloroethane	3945	2385	60	6	30	35-110
Indeno(1,2,3-cd)pyrene	3945	4815	122*	11	30	40-120
Isophorone	3945	2747	70	2	30	45-110
2-Methylnaphthalene	3945	5168	57	0	30	40-110
Naphthalene	3945	3487	76	2	30	40-105
2-Methylphenol	3945	2546	64	7	30	40-105
4-Methylphenol	3945	2512	64	1	30	40-105
2-Nitroaniline	3945	2240	57	13	30	45-120
3-Nitroaniline	3945	2909	74	5	30	25-110
4-Nitroaniline	3945	2811	71	20	30	35-115
Nitrobenzene	3945	2452	62	2	30	40-115
2-Nitrophenol	3945	3210	81	16	30	40-110
					l	ll

(1) N-Nitroso-di-n-propylamine

#	Column	to	be	used	to	flag	recovery	and	RPD	values	with	an	asterisk
•••				7 - C	\circ	7 4 4							

COMMENTS:	

^{*} Values outside of QC limits

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix Spike - Client Sample No.: NBG-Topsoil Lab Sample ID: 0911230-02

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LI RPD	IMITS REC.
				=====	=====	=====
4-Nitrophenol	3945	1902	48	4	30	15-140
N-Nitrosodiphenylamine	3945	3974	101	1	30	50-115
N-Nitroso-di-n-prop.(1)	3945	2214	56	1	30	40-115
Pentachlorophenol	3945	3480	88	7	30	25-120
Phenol	3945	2489	63	1	30	40-100
Pyrene	3945	3825	92	1	30	45-125
1,2,4,5-Tetrachlorobenz	3945	3301	84	2	30	50-150
2,4,5-Trichlorophenol	3945	3325	84	4	30	50-110
2,4,6-Trichlorophenol	3945	2960	75	10	30	45-110

(1) N-Nitroso-di-n-propylamine

 $\ensuremath{\text{\#}}$ Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 65 outside limits

Spike Recovery: 7 out of 130 outside limits

FORM 4 SEMIVOLATILE METHOD BLANK SUMMARY

9K30917-BLK1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Lab File ID: K30917B1 Lab Sample ID: 9K30917-BLK1

Instrument ID: BNA1 Date Extracted: 11/30/09

Matrix: (soil/water) SOIL Date Analyzed: 12/04/09

Level: (low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1225

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CAMDLE NO	LAB SAMDLE ID	LAB FILE ID	DATE ANALYZED
	SAMPLE NO.			========
01 02 03 04 05 06 07 08 09 11 12 13 14 15 16 17 18	SAMPLE NO. ===================================	SAMPLE ID ====================================	LAB FILE ID ================================	ANALYZED
20 21				
22				
23 24				
25				
26 27				
28				
29 30				

COMMENTS:	

page 1 of 1

FORM 1 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K30917-BLK1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix: (soil/water) SOIL Lab Sample ID: 9K30917-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K30917B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/30/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 12:25

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

83-32-9Acenaphthene 26 330 U 208-96-8Acenaphthylene 20 330 U 98-86-2Acenaphthylene 28 330 U 1912-24-9Atrazine 28 330 U 120-12-7Anthracene 27 330 U 120-12-7Anthracene 27 330 U 120-52-7

FORM 1 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K30917-BLK1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Matrix: (soil/water) SOIL Lab Sample ID: 9K30917-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K30917B1

% Moisture: 0 decanted: (Y/N) N Date Sampled:

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/30/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 12:25

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

	1300	
84-74-2Di-n-butylphthalate 3 534-52-14,6-Dinitro-2-methylphenol 2 51-28-52,4-Dinitrophenol 13 121-14-22,4-Dinitrotoluene 2 606-20-22,6-Dinitrotoluene 3 117-84-0Di-n-octylphthalate 2 206-44-0Fluoranthene 5 86-73-7Fluorene 2 118-74-1Hexachlorobenzene 3 87-68-3	330 330 330 330 330 330 330 330 330 330	ממממממממממממממממממממממממממממממממ

(1) - Cannot be separated from Diphenylamine

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA17287

Lab File ID: SEQ-TUN1

DFTPP Injection Date: 11/04/09

Instrument ID: BNA1

DFTPP Injection Time: 0825

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 to 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	42.8 0.0 (0.0)1 67.0 0.2 (0.3)1 46.5 0.0 100.0 6.9 17.2 1.76 7.8 51.8 10.3 (19.9)2
	1-Value is % mass 69 2-Value is % mass	442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA	LAB	LAB	בות עבו	TITNET I
	SAMPLE NO.	SAMPLE ID		DATE	TIME
	DAMELIE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
01	BNACALA1.0PP	CEO CATO			========
		SEQ-CAL2	SEQ-CAL2	11/04/09	0923
02	BNACALA2.0PP	SEQ-CAL3	SEQ-CAL3	11/04/09	0959
03	BNACALA5.0PP	SEQ-CAL4	SEQ-CAL4	11/04/09	1035
04	BNACALA10.0P	SEQ-CAL5	SEQ-CAL5	11/04/09	1112
05	BNACALA20.0P	SEQ-CAL6	SEQ-CAL6	11/04/09	1148
06	BNACALA40.0P	SEQ-CAL7	SEQ-CAL7	11/04/09	1224
07	BNACALA50.0P	SEQ-CAL8	SEQ-CAL8	11/04/09	1301
08	BNACALA60.0P	SEQ-CAL9	SEQ-CAL9	11/04/09	1338
09	BNACALA80.0P	SEQ-CALA	SEQ-CALA	11/04/09	1414
10	BNACALA100.0	SEQ-CALB	SEQ-CALB	11/04/09	1542
11	BNACALB1.0PP	SEQ-CALD	SEQ-CALD	11/04/09	1730
12	BNACALB2.0PP	SEQ-CALE	SEO-CALE	11/04/09	1807
13	BNACALB5.0PP	SEQ-CALF	SEQ-CALF	11/04/09	1843
14	BNACALB10.0P	SEQ-CALG	SEQ-CALG	11/04/09	1919
15	BNACALB20.0P	SEO-CALH	SEQ-CALH	11/04/09	1955
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page 1 of 1

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA17287

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 11/04/09

Instrument ID: BNA1 DFTPP Injection Time: 2103

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 to 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443	ABUNDANCE ====================================
442 443	Greater than 40.0% of mass 198	48.4 9.6 (19.8)2
l I	1-Value is % mass 69 2-Value is % mass	442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

		,		5300	(T) (T)
	EPA	LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
01	BNACALB50.0P	SEO-CALJ	SEQ-CALJ	11/04/09	2126
02	BNACALB60.0P	SEQ-CALK	SEQ-CALK	11/04/09	2202
				11/04/09	2238
03	BNACALB80.0P	1	SEQ-CALL		
04	BNACALB100.0	SEQ-CALM	SEQ-CALM	11/04/09	2313
05	ICV1-50PPM	SEQ-ICV1	SEQ-ICV1	11/04/09	2349
06	ICV1A-50PPM	SEQ-ICV3	SEQ-ICV3	11/05/09	0101
07	ICV2A-50PPM	SEQ-ICV4	SEQ-ICV4	11/05/09	0137
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22					

page 1 of 1

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA20495

Lab File ID: SEQ-TUN3 DFTPP Injection Date: 11/09/09

Instrument ID: BNA1 DFTPP Injection Time: 1353

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 to 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	40.5 0.0 (0.0)1 65.2 0.2 (0.3)1 45.8 0.0 100.0 7.0 17.1 1.82 7.7 49.0 9.9 (20.1)2
1	1-Value is % mass 69 2-Value is % mass	442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	1		·		
	EPA	LAB	LAB	DATE	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
					1
0.1	TOTTE CODDIA				
01	ICV5-50PPM	SEQ-ICV5	SEQ-ICV5	11/09/09	1415
02					
03					
04					
05					

06					
07					
08					
09					
10		***************************************			
11			***************************************		
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page 1 of 1

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 12/04/09

Instrument ID: BNA1 DFTPP Injection Time: 1012

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
1176 51 68 69 70 127 197 198 199 275 365 441 442 443	30.0 - 60.0% of mass 198 Less than 2.0% of mass 69 Mass 69 relative abundance Less than 2.0% of mass 69 40.0 - 60.0% of mass 198 Less than 1.0% of mass 198 Base Peak, 100% relative abundance 5.0 to 9.0% of mass 198 10.0 - 30.0% of mass 198 Greater than 1.0% of mass 198 Present, but less than mass 443 Greater than 40.0% of mass 198 17.0 - 23.0% of mass 442	30.3 0.0 (0.0)1 52.8 0.1 (0.2)1 44.0 0.0 100.0 6.8 17.9 1.84 8.0 52.6 10.1 (19.1)2
	1-Value is % mass 69 2-Value is % mass	442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 02 03 04 05 07 08 01 11 12 13 14 15 17 18	SAMPLE NO. ====================================	SEQ-CCV2 9K30917-BLK1 9K30917-BS1 0911230-01 0911230-02 0911230-02MS	FILE ID ====================================	ANALYZED ====================================	ANALYZED ====================================
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page 1 of 1

FORM 8 SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Lab File ID (Standard): SEQ-CCV3 Date Analyzed: 12/04/09

Instrument ID: BNA1 Time Analyzed: 1034

	IS1 (DCB)		IS2 (NPT)		IS3 (ANT)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
		======				
12 HOUR STD	1207059	5.39	3979822	6.72	2144585	9.81
UPPER LIMIT	2414118	5.89	7959644	7.22	4289170	10.31
LOWER LIMIT	603530	4.89	1989911	6.22	1072293	9.31
CLIENT						
SAMPLE NO.						
		======		_======	21.0000	_======
01 9K30917-BLK1	1227707	5.39	3977013	6.71 6.71	2169962 2045059	9.80 9.81
02 9K30917-BLK1	1224442	5.39	3483754 2761753	6.72	1482892	9.83
03 NBG-BACKFILL	1132711 1016312	5.39 5.39	2576735	6.72	1554185	9.82
04 NBG-TOPSOIL 05 NBG-TOPSOILM	984986	5.39	2628695	6.72	1389053	9.83
05 NBG-TOPSOILM 06 NBG-TOPSOILM	924909	5.39	2647145	6.72	1471874	9.83
06 NBG-10PS011111 07	224202	3.35	2017113	0.72	22,20,2	
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IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area AREA LOWER LIMIT = -50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

page 1 of 1

FORM 8 SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Lab File ID (Standard): SEQ-CCV3 Date Analyzed: 12/04/09

Instrument ID: BNA1 Time Analyzed: 1034

	IS4 (PHN)		IS5 (CRY)		IS6 (PRY)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	3396112	13.56	2092833	21.19	1491215	25.25
UPPER LIMIT	6792224	14.06	4185666	21.69	2982430	25.75
LOWER LIMIT	1698056	13.06	1046417	20.69	745608	24.75
CLIENT						
SAMPLE NO.						
=========		======		======	1.65.61.01	======
01 9K30917-BLK1	3314884	13.55	2042081	21.17	1656101	25.25 25.25
02 9K30917-BLK1	3277615	13.56	1927013	21.19	1278321	
03 NBG-BACKFILL	2388956	13.58	1719271	21.18	1324749 1297191	25.25 25.25
04 NBG-TOPSOIL	2553794	13.58	1697700	21.18 21.19	1203353	25.25
05 NBG-TOPSOILM	2336993	13.58	1511560	21.19	985085	25.25
06 NBG-TOPSOILM	2301374	13.59	1338309	21.19	303003	25.25
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IS4 (PHN) = Phenanthrene-d10 IS5 (CRY) = Chrysene-d12 IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT RT LOWER LIMIT = - 0.50 minutes of internal standard RT

* Values outside of QC limits.

page 1 of 1

[#] Column used to flag internal standard area values with an asterisk.

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373 Si

Calibration Date(s): 11/04/09 11/04/09 Instrument ID: BNA1

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

RF2: SEQ-CAL3 RF5: SEQ-CAL4

LAB FILE ID: RF1: SEQ-CAL2 RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
acenaphthene	1.011	1.105	1.113	1.110	1.159
Acenaphthene	1.355	1.460	1.608	1.541	1.649
	1.761	1.874	1.894	1.791	1.786
AcetophenoneAniline	2,100	2.284	2.257	2.310	2.168
Anthracene	0.894	0.980	1.017	1.054	1.030
Benzoic acid			0.081	0.146	0.237
Benzo (a) anthracene	0.949	0.917	0.983	1.010	1.053
Benzo (b) fluoranthene	0.857	0.898	1.052	1.132	1.121
Benzo(k) fluoranthene	0.806	0.964	1.046	1.143	1.170
Benzo(g,h,i)perylene	0.523	0.434	0.465	0.516	0.578
Benzo (a) pyrene	0.677	0.731	0.813	0.913	0.949
Benzyl alcohol	0.831	0.836	0.941	0.988	0.997
bis (2-Chloroethoxy) methane_	0.551	0.581	0.568	0.558	0.562
1,1'-Biphenyl	1.378	1.480	1.572	1.540	1.589
bis(2-Chloroethyl)ether	1.503	1.665	1.666	1.618	1.566
bis(2-Chloroisopropyl)ether	3.044	3.324	3.104	3.059	2.725
Bis(2-ethylhexyl)phthalate	3.011	0.942	1.100	1.244	1.330
4-Bromophenyl-phenylether	0.185	0.194	0.208	0.209	0.212
Butylbenzylphthalate	0.200	0.715	0.820	0.930	0.963
Carbazole	0.734	0.820	0.885	0.856	0.890
4-Chloroaniline	0.425	0.449	0.506	0.514	0.576
Caprolactam	0.123	0.082	0.130	0.116	0.113
4-Chloro-3-methylphenol	0.256	0.316	0.339	0.355	
2-Chloronaphthalene	1.062	1.133	1.119	1.099	1.130
2-Chlorophenol	1.315	1.435	1.429	1.445	1.369
4-Chlorophenyl-phenylether_	0.511	0.541	0.537	0.511	0.550
	0.870	0.918	0.933	0.950	0.990
Chrysene Dibenz(a,h)anthracene	0.408	0.416	0.392	0.430	0.525
Dibenzofuran	1.507	1.586	1.661	1.612	1.668
1,3-Dichlorobenzene	1.405	1.527	1.480	1.495	1.465
1,4-Dichlorobenzene	1.270	1.352	1.346	1.382	1.358
	1.230	1.367	1.340	1.338	1.317
1,2-Dichlorobenzene 2,4-Dichlorophenol	0.239	0.282	0.306	0.327	•
2,6-Dichlorophenol	0.218	0.273	0.299		0.316
Diethilphthalate	1.250	1.319	1.423	1.419	1.445
Diethylphthalate	0.411	0.417	0.437	0.442	0.414
2,4-Dimethylphenol	1.216	1.299	1.376	1.368	1.412
Dimethylphthalate	1.210	4.20	1.5,0	1	

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4 RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
Di-n-butylphthalate	1.236	1.400	1.562	1.639	1.639
4,6-Dinitro-2-methylphenol			0.023	0.048	0.088
2,4-Dinitrophenol			0.009	0.029	0.067
2,4-Dinitrotoluene	0.149	0.187	0.294	0.345	0.412
2,6-Dinitrotoluene	0.149	0.204	0.268	0.287	0.326
1,2-Diphenylhydrazine	1.154	1.233	1.222	1.249	1.234
Di-n-octylphthalate			2.086	2.585	2.634
Fluoranthene	0.800	0.830	0.866	0.928	0.971
Fluorene	1.055	1.163	1.158	1.195	1.226
Hexachlorobenzene	0.234	0.224	0.237	0.240	0.237
Hexachlorobutadiene	0.153	0.176	0.182	0.189	0.182
Hexachlorocyclopentadiene	0.116	0.120	0.141	0.163	0.188
Hexachloroethane	0.680	0.703	0.735	0.744	0.708
Indeno(1,2,3-cd) pyrene	0.376	0.342	0.415	0.442	0.544
Isophorone	0.694	0.812	0.912	0.928	0.912
2-Methylnaphthalene	0.557	0.591	0.621	0.646	0.654
1-Methylnaphthalene	0.484	0.544	0.522	0.533	0.555
4-Methylphenol	1.061	1.320	1.298	1.362	1.342
3-Methylphenol	1.095	1.320	1.298	1.362	1.342
Naphthalene	0.954	1.059	1.084	1.085	1.081
2-Methylphenol	1.162	1.297	1.297	1.354	1.352
2-Nitroaniline	0.316	0.378	0.465	0.495	0.492
3-Nitroaniline	0.202	0.228	0.271	0.306	0.366
4-Nitroaniline	0.166	0.145	0.142	0.192	0.267
Nitrobenzene	0.411	0.476	0.485	0.453	0.471
2-Nitrophenol		0.173	0.188	0.206	0.232
4-Nitrophenol			0.153	0.215	0.280
N-Nitroso-di-methylamine	1.074	1.269	1.111	1.190	1.135
N-Nitrosodiphenylamine	0.418	0.469	0.528	0.537	0.521
N-Nitroso-di-n-propylamine	1.092	1.226	1.145	1.080	1.013
Pentachlorophenol				0.083	0.118
Phenanthrene	0.899	0.967	0.960	1.006	1.010
Phenol	1.813	1.929	1.828	1.963	1.858
Pyrene	1.299	1.510	1.482	1.561	1.561
Pyridine	1.804	1.956	1.917	1.945	1.897
1,2,4,5-Tetrachlorobenzene	0.286	0.291	0.320	0.332	0.336
1,2,4-Trichlorobenzene	0.312	0.329	0.333	0.338	0.348
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Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Calibration Date(s): 11/04/09 11/04/09 Instrument ID: BNA1

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4 RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
2,4,5-Trichlorophenol	0.262	0.335	0.384	0.393	0.430
	0.204	0.300	0.357	0.378	0.401
	0.768	0.764	0.797	0.819	0.839
2-Fluorophenol_Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl_2,4,6-Tribromophenol_Terphenyl-d14	1.502	1.752	1.711	1.760	1.645
	1.823	2.048	1.976	2.048	1.939
	0.476	0.534	0.538	0.463	0.504
	1.204	1.290	1.386	1.360	1.351
	0.064	0.069	0.098	0.115	0.123
	0.716	0.809	0.835	0.884	0.932

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9 RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
	========				0.925
Acenaphthene	1.024	1.053	1.093	1.036	1 1
Acenaphthylene	1.388		1.472	1.407 1.312	1.300
Acetophenone	1.498	1.456	1.469		1.701
Aniline	1.900	1.923	1.856	1.683	
Anthracene	0.990	0.992	1.013	0.941	0.908
Benzoic acid	0.251	0.272	0.318	0.315	0.322
Benzo (a) anthracene	1.016	1.068	1.058	1.081	1.102
Benzo(b)fluoranthene	1.147	1.190	1.213	1.313	1.238
Benzo(k)fluoranthene	1.174	1.216	1.199	1.349	1.288
Benzo(g,h,i)perylene	0.507	0.587	0.549	0.590	0.625
Benzo(a)pyrene	0.942	1.003	1.074	1.075	
Benzyl alcohol	0.919	0.959	0.964	0.923	
bis(2-Chloroethoxy)methane	0.469	0.465	0.486	0.432	
1.1'-Biphenvl	1.446	1.443	1.455	1.340	
bis(2-Chloroethyl)ether	1.356	1.338	1.334	1.160	1.079
bis(2-Chloroisopropyl)ether_	2.195	2.049	1.972	1.701	
Bis(2-ethylhexyl)phthalate	1.336	1.400	1.236	1.422	1.465
4-Bromophenyl-phenylether	0.204	0.215	0.219	0.222	0.216
Butylbenzylphthalate	0.955	1.017	0.913	1.089	1.180
Carbazole	0.862	0.849	0.929	0.875	0.826
4-Chloroaniline	0.463	0.462	0.502	0.442	0.414
Caprolactam	0.107	0.111	0.115	0.110	0.112
4-Chloro-3-methylphenol	0.317	0.332	0.354	0.318	0.303
2-Chloronaphthalene	1.028	1.080	1.110	1.055	1.011
2-Chlorophenol	1.292	1.196	1.248	1.097	1.020
4-Chlorophenyl-phenylether_	0.523	0.556	0.572	0.573	0.545
Chrysene	0.932	1.016	0.992	1.002	1.051
Dibenz (a, h) anthracene	0.471	0.563	0.564	0.560	0.610
Dibenzofuran	1.523	1.524	1.578	1.460	1.441
1,3-Dichlorobenzene	1.362	1.343	1.334	1.190	1.063
1,4-Dichlorobenzene	1.230	1.214	1.245	1.082	1.011
1,2-Dichlorobenzene	1.170	1.186	1.164	1.034	0.928
2,4-Dichlorophenol	0.318	0.303	0.338	0.310	0.296
2,6-Dichlorophenol	0.290	0.299	0.334	0.298	0.284
Diethylphthalate	1.315	1.361	1.375	1.337	1.250
2,4-Dimethylphenol	0.355	0.347	0.376	0.330	0.312
Dimethylphthalate	1.296	1.340	1.314	1.311	1.245
Diffectivity in the state	1.250	1.510			
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Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Calibration Date(s): 11/04/09 11/04/09 Instrument ID: BNA1

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9 RF80: SEQ-CALA RF100: SEQ-CALB

COMPONED	DEAO	RF50	RF60	RF80	RF100
COMPOUND	RF40	RF50	RF60	KF6U	RF100
Di-n-butylphthalate	1.523	1.479	1.491	1.411	1.234
4,6-Dinitro-2-methylphenol	0.120	0.133		0.155	0.163
2,4-Dinitrophenol	0.106	0.137		0.178	0.194
2,4-Dinitrotoluene	0.402	0.419	0.446	0.433	0.441
2,6-Dinitrotoluene	0.303	0.330	0.349	0.353	0.353
1,2-Diphenylhydrazine	1.059	0.988	0.988	0.896	0.807
Di-n-octylphthalate	3.044	3.229	2.623		
Fluoranthene	0.915	0.915	0.976	0.926	0.848
Fluorene	1.144	1.207		1.186	1.138
Hexachlorobenzene	0.226	0.236	0.239	0.242	0.252
Hexachlorobutadiene	0.170	0.180	0.184	0.168	0.162
Hexachlorocyclopentadiene	0.183	0.210	0.234	0.219	0.207
Hexachloroethane	0.646	0.640	0.648	0.574	0.559
Indeno(1,2,3-cd)pyrene	0.461	0.534	0.530	0.562	0.591
Isophorone	0.756	0.728	0.836	0.768	0.733
2-Methylnaphthalene	0.571	0.585	0.625	0.539	0.480
1-Methylnaphthalene	0.491	0.498	0.527	0.461	0.439
4-Methylphenol	1.187	1.249	1.279	1.118	1.037
3-Methylphenol	1.187	1.249	1.279	1.118	1.037
Naphthalene	0.909	0.867	0.913	0.746	
2-Methylphenol	1.169	1.204	1.258	1.188	1.149
2-Nitroaniline	0.465	0.453	0.486	0.461	0.452
3-Nitroaniline	0.352	0.393	0.428	0.399	0.411
4-Nitroaniline	0.278	0.299	0.360	0.342	0.336
Nitrobenzene	0.401	0.375	0.406	0.354	0.343
2-Nitrophenol	0.232	0.231	0.261	0.244	0.239
4-Nitrophenol	0.265	0.295	0.314	0.301	0.275
N-Nitroso-di-methylamine	0.934	0.950	0.890		
N-Nitrosodiphenylamine	0.500	0.497	0.530	0.492	0.502
N-Nitroso-di-n-propylamine	0.842	0.814	0.845	0.774	0.723
Pentachlorophenol	0.137	0.145	0.157	0.162	0.165
Phenanthrene	0.988	0.991	1.004	0.942	0.887
Phenol	1.616	1.587	1.561	1.374	1.256
Pyrene	1.507	1.545	1.330	1.695	1.699
Pyridine	1.708	1.694	1.701	1.571	1.557
1,2,4,5-Tetrachlorobenzene	0.308	0.316	0.339	0.299	0.271
1,2,4-Trichlorobenzene	0.313	0.318	0.338	0.309	0.289

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1

Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9 RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 1,4-Dioxane	0.396 0.389 0.749	0.437 0.416 0.763	0.440 0.430 0.744	0.452 0.420 0.687	0.434 0.404 0.671
2-Fluorophenol_Phenol-d6_Nitrobenzene-d5_2-Fluorobiphenyl_2,4,6-Tribromophenol_Terphenyl-d14_	1.430 1.692 0.438 1.221 0.133 0.967	1.342 1.645 0.409 1.234 0.132 1.003	1.285 1.573 0.438 1.263 0.143 0.884	1.337 0.388 1.210 0.140 1.139	0.364 1.112 0.139

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

	T	COEFFICENTS %RSD					
COMPOUND	CURVE	A0	A1	A2	OR R^2		
	=====				=======		
Acenaphthene	AVRG		1.06284152		6.3		
Acenaphthylene	AVRG		1.46066854		7.6		
Acetophenone	AVRG		1.64909400		13.0		
Aniline	AVRG		2.01828543		11.7		
Anthracene	AVRG		0.98192517		5.3		
Benzoic acid	20RDR	0.12321304	3.34219057	-0.5325076	0.996		
Benzo (a) anthracene	AVRG		1.02364724		5.8		
Benzo (b) fluoranthene	AVRG		1.11611668		13.0		
Benzo (k) fluoranthene	AVRG		1.13565422		14.0		
Benzo(g,h,i)perylene	AVRG		0.53752343		11.2		
Benzo (a) pyrene	LINR	0.00000000	1.05770635		0.996		
Benzyl alcohol	AVRG		0.92473242		6.2		
bis(2-Chloroethoxy)methane_	AVRG		0.50716725		12.8		
1.1'-Biphenyl	AVRG		1.44566742		7.9		
bis(2-Chloroethyl)ether	AVRG		1.42849220		14.6		
bis(2-Chloroisopropyl)ether	20RDR	0.00000000	0.22792103	0.10183793	0.998		
Bis(2-ethylhexyl)phthalate	AVRG		1.27512350		13.1		
4-Bromophenyl-phenylether	AVRG		0.20853771		5.5		
Butylbenzylphthalate	AVRG		0.95351456		14.4		
Carbazole	AVRG		0.85263644		6.2		
4-Chloroaniline	AVRG		0.47534389		10.3		
Caprolactam	AVRG		0.11067848		11.3		
4-Chloro-3-methylphenol	AVRG		0.32715264		10.5		
2-Chloronaphthalene	AVRG		1.08273095		4.0		
2-Chlorophenol	AVRG		1.28452001		11.4		
4-Chlorophenyl-phenylether	AVRG		0.54199820		4.1		
Chrysene	AVRG		0.96539168		5.6		
Dibenz(a,h)anthracene	20RDR	1.899e-002	2.00693431	-0.2463653	0.998		
Dibenzofuran	AVRG		1.55600942		5.0		
1,3-Dichlorobenzene	AVRG		1.36631772		10.6		
1,4-Dichlorobenzene	AVRG		1.24910110		9.8		
1,2-Dichlorobenzene	AVRG		1.20761982		11.9		
2,4-Dichlorophenol	AVRG		0.30656766		10.0		
2,6-Dichlorophenol	AVRG		0.29130539		10.5		
	AVRG		1.34935597		5.1		
2,4-Dimethylphenol	AVRG		0.38441605		12.0		
	AVRG		1.31765363		4.5		
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Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

	T		%RSD		
COMPOUND	CURVE	A0	A1	A2	OR R^2
	=====				
Di-n-butylphthalate	AVRG		1.46154006		9.9
4,6-Dinitro-2-methylphenol	20RDR	0.16252585	6.90456966	-2.9810031	0.997
2,4-Dinitrophenol	20RDR	0.22338235	6.44651440	-3.7969989	0.990
2,4-Dinitrotoluene	LINR	0.00000000	0.43440198		0.998
2,6-Dinitrotoluene	LINR	0.00000000	0.34658681		0.996
1,2-Diphenylhydrazine	AVRG	i	1.08311538		14.6
Di-n-octylphthalate	AVRG		2.70041527		14.8
Fluoranthene	AVRG		0.89752410		6.6
Fluorene	AVRG		1.17184057		4.6
Hexachlorobenzene	AVRG		0.23676557		3.3
Hexachlorobutadiene	AVRG		0.17459508		6.4
Hexachlorocyclopentadiene	20RDR	0.00000000	4.86095632	-0.4072599	0.992
Hexachloroethane	AVRG		0.66364076		9.5
Indeno(1,2,3-cd)pyrene	20RDR	1.16e-002	2.09215650	-0.2790025	0.998
Isophorone	AVRG		0.80804350		10.6
2-Methylnaphthalene	AVRG		0.58683980		9.0
1-Methylnaphthalene	AVRG		0.50541876		7.4
4-Methylphenol	AVRG		1.22535151		9.6
3-Methylphenol	AVRG		1.22880659		9.2
Naphthalene	AVRG		0.96646467		12.4
2-Methylphenol	AVRG		1.24321184		6.3
2-Nitroaniline	AVRG		0.44636107		12.6
3-Nitroaniline	20RDR	0.00000000	2.70296877	-0.2860563	0.997
4-Nitroaniline	20RDR	0.00000000		-0.6969726	0.993
Nitrobenzene	AVRG		0.41752872		12.4
2-Nitrophenol	AVRG		0.22302425		12.7
4-Nitrophenol	20RDR	0.10509973	2.70371589	0.96455740	0.993
N-Nitroso-di-methylamine	AVRG		1.06926336		12.5
N-Nitrosodiphenylamine	AVRG		0.49942652		7.1
N-Nitroso-di-n-propylamine	20RDR	-1.04e-002	0.94403214	0.23852993	0.998
Pentachlorophenol	LINR	0.17596574	0.17673923		0.998
Phenanthrene	AVRG		0.96542045		4.5
Phenol	AVRG		1.67859697		14.2
Pyrene	AVRG		1.51900735		8.6
Pyridine	AVRG		1.77503937		8.5
1,2,4,5-Tetrachlorobenzene_	AVRG		0.30989782		7.4
1,2,4-Trichlorobenzene	AVRG		0.32279108		5.5

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

	l .	(%RSD		
COMPOUND	CURVE	A0	A1	A2	OR R^2
	=====				
2,4,5-Trichlorophenol	AVRG		0.39635192		14.8
2,4,6-Trichlorophenol	LINR	1.543e-002	0.41585612		0.998
1,4-Dioxane	AVRG		0.76017709		6.9
	=====			_=========	
2-Fluorophenol	AVRG		1.55324382		12.2
Phenol-d6	AVRG		1.78691664		13.6
Nitrobenzene-d5	AVRG		0.45516119		13.0
2-Fluorobiphenyl	AVRG		1.26310883		6.7
2,4,6-Tribromophenol	LINR	0.00000000	0.13850672		0.998
Terphenyl-d14	AVRG		0.90768440		13.4

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA8637352

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CALD RF2: SEQ-CALE RF5: SEQ-CALF RF10: SEQ-CALG RF20: SEQ-CALH

COMPOUND	RF1	RF2	RF5	RF10	RF20
Atrazine	0.169	0.179 0.502	0.203 0.513	0.204 0.596	0.210 0.671
Benzidine Benzaldehyde	1.391	1.374	1.442	1.346	1.378
3,3'-Dichlorobenzidine 2,3,4,6-Tetrachlorophenol	0.264	0.273	0.278 0.102	0.284 0.155	0.319 0.210
2-Chloroacetophenone 2-Chlorobenzalmalononitrile	0.572 0.279	0.628 0.299	0.678 0.307	0.688 0.326	0.694 0.327

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: RF80: SEQ-CALL RF100: SEQ-CALM

RF50: SEQ-CALJ RF60: SEQ-CALK

COMPOUND	RF40	RF50	RF60	RF80	RF100
Atrazine Benzidine Benzaldehyde 3,3'-Dichlorobenzidine 2,3,4,6-Tetrachlorophenol 2-Chloroacetophenone 2-Chlorobenzalmalononitrile		0.211 0.750 1.176 0.328 0.227 0.610 0.297	0.220 0.719 1.196 0.344 0.255 0.637 0.288	0.221 0.742 1.147 0.387 0.266 0.637 0.301	0.212 0.724 1.075 0.354 0.269 0.571 0.276

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0 A1		%RSD OR R^2
	=====			
Atrazine	AVRG		0.20324921	8.8
Benzidine	LINR	0.00000000	0.72953254	0.998
Benzaldehyde	AVRG		1.28057399	10.3
3,3'-Dichlorobenzidine	AVRG		0.31460741	13.4
2,3,4,6-Tetrachlorophenol	LINR	0.12687530	0.28002550	0.997
2-Chloroacetophenone	AVRG		0.63498709	7.2
2-Chlorobenzalmalononitrile	AVRG		0.29992935	6.1

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date: 11/04/09 Time: 2349

Lab File ID: SEQ-ICV1 \checkmark Init. Calib. Date(s): 11/04/09 11/04/09

Init. Calib. Times: 0847 2313

COMPOUND	RRF	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Aniline	2.018	2.100	50.00	52.02		AVRG	4.0	25.0

ICV SV

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date: 11/05/09 Time: 0101

Lab File ID: SEQ-ICV3 / Init. Calib. Date(s): 11/04/09 11/04/09

Init. Calib. Times: 0847 2313

	[CURVE	CCAL	MIN			MAX
COMPOUND	RRF	RRF50	TRUOMA	TRUOMA	RRF	CURVE	%D	%D
	=====	=====		=====	=====	=====		====
Acenaphthene	1.063	1.128	50.00	53.08		AVRG	6.2	25.0
Acenaphthylene	1.460	1.442	50.00	49.36		AVRG		25.0
Acetophenone	1.649	1.460	50.00	44.28		AVRG	-11.4	
Anthracene	0.982	0.991	50.00	50.48		AVRG		25.0
Benzoic acid	0.243	0.292	50.00	50.94		20RDR		25.0
Benzo (a) anthracene	1.024	1.069	50.00	52.24		AVRG		25.0
Benzo (b) fluoranthene	1.116	1.143	50.00	51.20		AVRG		25.0
Benzo(k) fluoranthene	1.136	1.120	50.00	49.29		AVRG		25.0
Benzo(g,h,i)perylene	0.537	0.658	50.00	61.20		AVRG		25.0
Benzo (a) pyrene	0.925	1.002	50.00	47.36	,	LINR		25.0
Benzyl alcohol	0.925	0.960	50.00	51.92		AVRG		25.0
1,1'-Biphenyl	1.446	1.362	50.00	47.11		AVRG		25.0
bis(2-Chloroethoxy)methane	0.507	0.482	50.00	47.57		AVRG		25.0
bis(2-Chloroethyl)ether	1.428	1.543	50.00	54.01		AVRG		25.0
bis(2-Chloroisopropyl)ether	2.575	2.160	50.00	54.30		20RDR		25.0
Bis(2-ethylhexyl)phthalate	1.275	1.475	50.00	57.82		AVRG		25.0
4-Bromophenyl-phenylether	0.208	0.242	50.00	58.08		AVRG		25.0
Butylbenzylphthalate	0.954	1.134	50.00	59.47		AVRG		25.0
Carbazole	0.853	0.885	50.00	51.91		AVRG		25.0
4-Chloroaniline	0.475	0.430	50.00	45.24		AVRG		25.0
Caprolactam	0.111	0.110	50.00	49.49		AVRG		25.0
4-Chloro-3-methylphenol	0.327	0.336	50.00	51.29		AVRG		25.0
2-Chloronaphthalene	1.083	1.053	50.00	48.64		AVRG		25.0
2-Chlorophenol	1.285	1.237	50.00	48.16		AVRG		25.0
4-Chlorophenyl-phenylether	0.542	0.562	50.00	51.87		AVRG		25.0
Chrysene	0.965	1.032	50.00	53.47		AVRG		25.0
Dibenz(a,h)anthracene	0.494	0.644	50.00	58.97		20RDR		25.0
Dibenzofuran	1.556	1.481	50.00	47.59		AVRG		25.0
1,2-Dichlorobenzene	1.207	1.320	50.00	54.68		AVRG		25.0
1,3-Dichlorobenzene	1.366	1.449	50.00	53.04		AVRG	i .	25.0
1,4-Dichlorobenzene	1.249	1.345	50.00	53.85		AVRG	l .	25.0
2,4-Dichlorophenol	0.307	0.325	50.00	52.99		AVRG	6.0	25.0

page 1 of 3

ICV SV

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date: 11/05/09 Time: 0101

Init. Calib. Times: 0847 2313

			CURVE	CCAL	MIN			MAX
COMPOUND	RRF	RRF50	AMOUNT	TRUDOMA	RRF	CURVE	%D	%D
		=====	=====	1	=====	=====	=====	====
Diethylphthalate	1.349	1.539	50.00	57.03		AVRG	14.1	25.0
2,4-Dimethylphenol	0.384	0.332	50.00	43.21		AVRG	-13.6	
Dimethylphthalate	1.318	1.495	50.00	56.74		AVRG	13.5	25.0
Di-n-butylphthalate	1.461	1.653	50.00	56.54		AVRG	13.1	
4,6-Dinitro-2-methylphenol_	0.110	0.135	50.00			20RDR	-0.6	
2,4-Dinitrophenol	0.111	0.140	50.00		0.050			25.0
2,4-Dinitrotoluene	0.353	0.474	50.00	54.57	1	LINR	9.1	25.0
2,6-Dinitrotoluene	0.292	0.388	50.00	56.04		LINR	12.1	25.0
Di-n-octylphthalate	2.700	2.924	50.00	54.14		AVRG	8.3	25.0
1,2-Diphenylhydrazine	1.083	1.093	50.00	50.46		AVRG		25.0
Fluoranthene	0.898	0.948	50.00	52.79		AVRG		25.0
Fluorene	1.172	1.184	50.00	50.53		AVRG		25.0
Hexachlorobenzene	0.237	0.249	50.00	52.65		AVRG	5.3	25.0
Hexachlorobutadiene	0.175	0.198	50.00	56.60		AVRG	13.2	25.0
Hexachlorocyclopentadiene	0.178	0.262	50.00	61.85	0.050	20RDR	23.7	25.0
Hexachloroethane	0.664	0.712	50.00	53.66		AVRG	7.3	25.0
Indeno(1,2,3-cd)pyrene	0.480	0.613	50.00	58.03		20RDR	16.1	25.0
Isophorone	0.808	0.924	50.00	57.16		AVRG	14.3	
2-Methylnaphthalene	0.587	0.560	50.00	47.68		AVRG	-4.6	
1-Methylnaphthalene	0.505	0.492	50.00	48.72		AVRG	-2.6	25.0
4-Methylphenol	1.225	1.265	50.00	51.60		AVRG	3.2	25.0
2-Methylphenol	1.243	1.219	50.00	49.02		AVRG	-2.0	
3-Methylphenol	1.229	1.265	50.00	51.46		AVRG	2.9	25.0
Naphthalene	0.966	0.866	50.00	44.80		AVRG	-10.4	25.0
2-Nitroaniline	0.446	0.416	50.00	46.65		AVRG	-6.7	25.0
3-Nitroaniline	0.336	0.392	50.00	50.26		20RDR	0.5	
4-Nitroaniline	0.253	0.315	50.00	50.24		20RDR	0.5	25.0
Nitrobenzene	0.418	0.426	50.00	51.06		AVRG	2.1	25.0
2-Nitrophenol	0.223	0.254	50.00	57.05		AVRG	14.1	25.0
4-Nitrophenol	0.262	0.288	50.00	48.12	0.050	20RDR	-3.8	25.0
N-Nitroso-di-methylamine	1.069	0.981	50.00	45.89		AVRG	-8.2	25.0
N-Nitrosodiphenylamine(1)	0.499	0.606	50.00	60.73		AVRG	21.4	
N-Nitroso-di-n-propylamine	0.955	0.930	50.00	56.42	0.050	20RDR	12.8	
Pentachlorophenol	0.138	0.152	50.00	49.95		LINR	-0.1	
Phenanthrene	0.965	0.945	50.00	48.95		AVRG	-2.1	1
Phenol	1.678	1.569	50.00	46.74		AVRG		25.0
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(1) Cannot be separated from Diphenylamine

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date: 11/05/09 Time: 0101

Init. Calib. Times: 0847 2313

COMPOUND	RRF	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Pyrene Pyridine 1,2,4,5-Tetrachlorobenzene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 1,4-Dioxane	1.519 1.775 0.310 0.323 0.396 0.370 0.760	1.591 1.637 0.296 0.349 0.416 0.415 0.794	50.00 50.00 50.00 50.00	52.53 50.48		AVRG AVRG AVRG AVRG AVRG LINR AVRG	-7.8 -4.5 8.1 5.1 1.0	25.0 25.0 25.0 25.0 25.0 25.0 25.0
2-Fluorophenol_Phenol-d6_Nitrobenzene-d5 2-Fluorobiphenyl_2,4,6-Tribromophenol_Terphenyl-d14_	1.553 1.787 0.455 1.263 0.116 0.908	1.316 1.617 0.409 1.188 0.134 0.984	100.0 100.0 50.00 50.00 100.0	47.04		AVRG AVRG AVRG AVRG AVRG LINR AVRG	-10.0 -5.9 -3.1	25.0

page 3 of 3

ICV SV

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date: 11/05/09 Time: 0137

Lab File ID: SEQ-ICV4 Init. Calib. Date(s): 11/04/09 11/04/09

Init. Calib. Times: 0847 2313

COMPOUND	RRF	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Atrazine Benzaldehyde Benzidine 3,3'-Dichlorobenzidine 2,3,4,6-Tetrachlorophenol	0.203 1.280 0.652 0.314 0.212	1.165 0.797 0.363	50.00 50.00	45.51 54.61 57.68		AVRG AVRG LINR AVRG LINR	-9.0 9.2 15.4	25.0 25.0 25.0 25.0 25.0

ICV SV

FORM 7 SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Instrument ID: BNA1 Calibration Date: 12/04/09 Time: 1034

Init. Calib. Times: 0923 1640

COMPOUND	RRF	RRF50	l .	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	1.063	1.022	50.00	48.10	=====	AVRG	-3.8	20.0
Acenaphthylene	1.460	1.456	50.00	49.86		AVRG	-0.3	
Acetophenone	1.649	1.184	50.00	35.88		AVRG	-28.2	
Atrazine	0.203	0.219	50.00	53.89		AVRG	7.8	
Anthracene	0.982	0.953	50.00			AVRG	-3.0	
Benzaldehyde	1.280	0.886	50.00	34.58		AVRG	-30.8	
Benzo (a) anthracene	1.024	1.120	50.00			AVRG	9.4	
Benzo (b) fluoranthene	1.116	1.158	50.00			AVRG	3.7	
Benzo (k) fluoranthene	1.136	1.159	50.00	51.03		AVRG	2.0	
Benzo(q,h,i)perylene	0.537	0.737	50.00			AVRG	37.1	
Benzo (a) pyrene	0.925	1.049	50.00	49.58		LINR	-0.8	20.0
1,1'-Biphenyl	1.446	1.363	50.00	47.16		AVRG	-5.7	
bis (2-Chloroethoxy) methane	0.507	0.400	50.00	39.48	ļ	AVRG	-21.0	
bis(2-Chloroethyl)ether	1.428	1.288	50.00	45.09		AVRG	-9.8	
bis (2-Chloroisopropyl) ether	2.575	1.436	50.00	29.49		20RDR	-41.0	
Bis (2-ethylhexyl) phthalate	1.275	1.178	50.00	46.20		AVRG	-7.6	
4-Bromophenyl-phenylether	0.208	0.221	50.00	53.03		AVRG	6.0	
Butylbenzylphthalate	0.200	0.912	50.00	47.82		AVRG	-4.4	
Caprolactam	0.111	0.144	50.00	65.31		AVRG	30.6	
Carbazole	0.853	0.875	50.00	51.32		AVRG	2.6	
4-Chloroaniline	0.475	0.420	50.00	44.14		AVRG	-11.7	
4-Chloro-3-methylphenol	0.327	0.299	50.00	45.69		AVRG	-8.6	20.0
2-Chloronaphthalene	1.083	1.046	50.00	48.31		AVRG	-3.4	20.0
2-Chlorophenol	1.285	1.096	50.00	42.65		AVRG	-14.7	
4-Chlorophenyl-phenylether	0.542	0.519	50.00	47.89		AVRG	-4.2	
Chrysene	0.965	0.938	50.00	48.60		AVRG	-2.8	
Dibenz(a,h)anthracene	0.494	0.704	50.00	63.81		20RDR	27.6	
Dibenzofuran	1.556	1.476	50.00	47.45		AVRG	-5.1	
3,3'-Dichlorobenzidine	0.314	0.398	50.00	63.31		AVRG	26.6	
2,4-Dichlorophenol	0.314	0.311	50.00	50.74		AVRG	1.5	20.0
Diethylphthalate	1.349	1.320	50.00	48.92		AVRG	-2.2	20.0
2,4-Dimethylphenol	0.384	0.298	50.00	38.70		AVRG	-22.6	
Dimethylphthalate	1.318	1.433	50.00	54.40		AVRG	8.8	
Di-n-butylphthalate	1.461	1.362	50.00	46.59		AVRG	-6.8	
4,6-Dinitro-2-methylphenol	0.110	0.165	50.00	58.42		20RDR	16.8	
2,4-Dinitrophenol	0.110	0.165	50.00	66.70	0.050		33.4	
2,4-Dinitrophenoi 2,4-Dinitrotoluene	0.353	0.435	50.00	50.09	0.050	LINR	0.2	
Z,4-DIHILLOCOLUCHE	0.353	0.435	30.00	50.09		TITIM	0.2	

FORM VII SV

FORM 7 SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: ARCADIS RADFORD

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ARC.B11230

Instrument ID: BNA1 Calibration Date: 12/04/09 Time: 1034

Init. Calib. Times: 0923 1640

COMPOUND	RRF	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
======================================	=====		=====	=====		=====		
2,6-Dinitrotoluene	0.292	0.422	50.00	60.88		LINR	21.8	
Di-n-octylphthalate	2.700	2.386	50.00			AVRG	-11.6	
Fluoranthene	0.898	0.921	50.00	51.30		AVRG	2.6	20.0
Fluorene	1.172	1.137	50.00	48.53		AVRG	-2.9	
Hexachlorobenzene	0.237	0.249	50.00	52.61		AVRG	5.2	
Hexachlorobutadiene	0.175	0.168	50.00	48.01	0 050	AVRG	-4.0	20.0
Hexachlorocyclopentadiene	0.178	0.194	50.00	46.16	0.050	20RDR	-7.7	
Hexachloroethane	0.664	0.591	50.00	44.50		AVRG	-11.0	
Indeno(1,2,3-cd)pyrene	0.480	0.728	50.00			20RDR	34.8	
Isophorone	0.808	0.645	50.00	39.94		AVRG	-20.1	
2-Methylnaphthalene	0.587	0.569	50.00	48.49		AVRG	-3.0	
Naphthalene	0.966	0.798	50.00	41.30		AVRG	-17.4	
2-Methylphenol	1.243	1.143	50.00	45.97		AVRG	-8.0	
4-Methylphenol	1.225	0.914	50.00	37.28		AVRG	-25.4	
2-Nitroaniline	0.446	0.373	50.00	41.84		AVRG	-16.3	
3-Nitroaniline	0.336	0.464	50.00	58.83		20RDR	17.7	
4-Nitroaniline	0.253	0.366	50.00	57.57		20RDR	15.1	
Nitrobenzene	0.418	0.342	50.00	40.92		AVRG	-18.2	
2-Nitrophenol	0.223	0.255	50.00	57.16		AVRG	14.3	20.0
4-Nitrophenol	0.262	0.211	50.00	35.48	0.050	20RDR	-29.0	
N-Nitrosodiphenylamine(1)	0.499	0.540	50.00	54.09		AVRG	8.2	20.0
N-Nitroso-di-n-propylamine	0.955	0.612	50.00	34.08	0.050	20RDR	-31.8	
Pentachlorophenol	0.138	0.170	50.00	55.14		LINR	10.3	20.0
Phenol	1.678	1.378	50.00	41.05		AVRG	-17.9	20.0
Pyrene	1.519	1.416	50.00	46.60		AVRG	-6.8	
1,2,4,5-Tetrachlorobenzene	0.310	0.306	50.00	49.30		AVRG	-1.4	
2,4,5-Trichlorophenol	0.396	0.436	50.00	54.96		AVRG	9.9	
2,4,6-Trichlorophenol	0.370	0.429	50.00	52.18		LINR	4.4	20.0
	<u></u>	=====						====
2-Fluorophenol	1.553	1.139	100.0	73.32		AVRG	-26.7	
Phenol-d6	1.787	1.299	100.0	72.69		AVRG	-27.3	
Nitrobenzene-d5	0.455	0.383	50.00	42.06		AVRG	-15.9	
2-Fluorobiphenyl	1.263	1.209	50.00	47.87		AVRG	-4.2	
2,4,6-Tribromophenol	0.116	0.123	100.0	88.80		LINR	-11.2	
Terphenyl-d14	0.908	0.987	50.00	54.38		AVRG	8.8	
101211111								
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(1) Cannot be separated from Diphenylamine

FORM VII SV

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Soil</u>

Laboratory ID:

<u>0911230-01</u>

File ID:

009R0901.D

Sampled:

11/24/09 15:30

Prepared:

12/01/09 11:00

Analyzed:

12/02/09 20:32

Solids:

<u>83.65</u>

Preparation:

EXT 3546

Dilution:

1

Sullus.	83.03	Tropai	ulion.		<u> </u>	Dilation	 -	
Batch:	<u>9L01006</u>	Sequence:	<u>9L33706</u>		Calibration:	9310003	Instrument:	GL-ECD4
CAS NO.	COMPOUND			CON	NC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD					0.203	 0.801	U
72-55-9	4,4'-DDE					0.203	0.801	U
50-29-3	4,4'-DDT					0.203	0.801	U
309-00-2	Aldrin					0.132	0.395	U
319-84-6	alpha-BHC					0.132	0.395	U
5103-71-9	alpha-Chlordane					0.132	0.395	U
319-85-7	beta-BHC					0.132	0.395	U
319-86-8	delta-BHC					0.132	0.395	U
60-57-1	Dieldrin					0.203	0.801	U
959-98-8	Endosulfan I					0.132	 0.395	U
33213-65-9	Endosulfan II					0.203	0.801	U
1031-07-8	Endosulfan sulfate	;				0.203	0.801	U
72-20-8	Endrin					0.203	0.801	U
7421-93-4	Endrin aldehyde					0.203	0.801	U
53494-70-5	Endrin ketone					0.203	0.801	U
58-89-9	gamma-BHC (Lin	dane)				0.132	0.395	U
5566-34-7	gamma-Chlordane	;				0.132	0.395	U
76-44-8	Heptachlor					0.132	0.395	U
1024-57-3	Heptachlor epoxid	e				0.132	0.395	U
72-43-5	Methoxychlor					0.132	 0.395	U
57-74-9	Chlordane (tech)					0.681	2.03	U
8001-35-2	Toxaphene					13.2	39.5	U
SYSTEM MO	NITORING COM	POUND	ADDED (ug	/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m	-xylene		19.92	2	16.78	84.2	30 - 120	
Tetrachloro-m	-xylene [2C]		19.92	2	13.04	65.4	30 - 120	
Decachlorobip	henyl		19.92	2	18.08	90.8	35 - 140	
Decachlorobip	henyl [2C]		19.92	2	17.42	87.4	 35 - 140	

^{*} Values outside of QC limits

NBG-Topsoil

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

Matrix: Soil Laboratory ID: 0911230-02 File ID: 010R1001.D

Sampled: <u>11/24/09 14:30</u> Prepared: <u>12/01/09 11:00</u> Analyzed: <u>12/02/09 20:50</u>

Solids: 78.24 Preparation: EXT_3546 Dilution: 1

Parather 01.01006 Sequence: 91.33706 Calibration: 9310003 Instrument:

Solius.	70.27	•						
Batch:	<u>9L01006</u>	Sequence:	<u>9L33706</u>		Calibration:	9310003	Instrument:	GL-ECD4
CAS NO.	COMPOUND			CON	IC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD					0.217	0.856	U
72-55-9	4,4'-DDE					0.217	0.856	U
50-29-3	4,4'-DDT					0.217	0.856	U
309-00-2	Aldrin					0.141	0.422	U
319-84-6	alpha-BHC				0.376	0.141	0.422	JPM
5103-71-9	alpha-Chlordane					0.141	0.422	U
319-85-7	beta-BHC				0.677	0.141	0.422	PX
319-86-8	delta-BHC					0.141	0.422	U
60-57-1	Dieldrin					0.217	0.856	U
959-98-8	Endosulfan I					0.141	0.422	U
33213-65-9	Endosulfan II					0.217	0.856	U
1031-07-8	Endosulfan sulfate	÷				0.217	0.856	U
72-20-8	Endrin					0.217	0.856	U
7421-93-4	Endrin aldehyde					0.217	0.856	U
53494-70-5	Endrin ketone					0.217	0.856	U
58-89-9	gamma-BHC (Lin-	dane)			0.413	0.141	0.422	JPX
5566-34-7	gamma-Chlordane	,				0.141	0.422	U
76-44-8	Heptachlor					0.141	0.422	U
1024-57-3	Heptachlor epoxid	le			0.593	0.141	0.422	
72-43-5	Methoxychlor					0.141	0.422	U
57-74-9	Chlordane (tech)					0.729	2.17	U
8001-35-2	Toxaphene					14.1	42.2	U
	NITORING COM	POUND	ADDED (ug	g/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m			21.30	0	17.92	84.1	30 - 120	
Tetrachloro-m			21.30	0	19.04	89.4	30 - 120	
Decachlorobin	henyl		21.30	0	19.16	89.9	35 - 140	
Decachlorobin	henyl [2C]		21.30	0	16.89	79.3	35 - 140	<u> </u>

^{*} Values outside of QC limits



SURROGATE STANDARD RECOVERY AND RT SUMMARY SW8081A

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

Sequence: <u>9L33706</u> Instrument: <u>GL-ECD4</u>

Calibration: <u>9310003</u>

Surrogate	Spike	% December	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Compound	Level	Recovery	Limits	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Calibration Check (9L33706-C		····	T		004F0401.D	Analyzed: 12		
Tetrachloro-m-xylene	100.0	104	80 - 120	4.219		4.2190	+/-0.030	*
Tetrachloro-m-xylene [2C]	100.0	82.5	80 - 120	3.506		3.5060	+/-0.030	*
Decachlorobiphenyl	100.0	123	80 - 120	10.049		10.0490	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	120	80 - 120	8.525		8.5250	+/-0.030	*
Blank (9L01006-BLK1) ug/Kg	wet			Lab File ID:	007F0701.D	Analyzed: 12	/02/09 19:55	
Tetrachloro-m-xylene	16.67	99.4	70 - 125	4.218	4.219	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	77.7	70 - 125	3.506	3.506	0.0000	+/-0.030	
Decachlorobiphenyl	16.67	127	55 - 130	10.053	10.049	0.0040	+/-0.030	
Decachlorobiphenyl [2C]	16.67	121	55 - 130	8.526	8.525	0.0010	+/-0.030	
LCS (9L01006-BS1) ug/Kg we	t			Lab File ID:	008F0801.D	Analyzed: 12	/02/09 20:14	
Tetrachloro-m-xylene	16.67	102	70 - 125	4.218	4.219	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	78.7	70 - 125	3.506	3.506	0.0000	+/-0.030	
Decachlorobiphenyl	16.67	118	55 - 130	10.05	10.049	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	16.67	115	55 - 130	8.524	8.525	-0.0010	+/-0.030	
NBG-Backfill (0911230-01) ug		Lab File ID:	009F0901.D	Analyzed: 12	/02/09 20:32			
Tetrachloro-m-xylene	19.92	84.2	30 - 120	4.217	4.219	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	19.92	65.4	30 - 120	3.505	3.506	-0.0010	+/-0.030	
Decachlorobiphenyl	19.92	90.8	35 - 140	10.051	10.049	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	19.92	87.4	35 - 140	8.525	8.525	0.0000	+/-0.030	
NBG-Topsoil (0911230-02) ug/	Kg dry			Lab File ID:	010F1001.D	Analyzed: 12	/02/09 20:50	
Tetrachloro-m-xylene	21.30	84.1	30 - 120	4.219	4.219	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	21.30	89.4	30 - 120	3.506	3.506	0.0000	+/-0.030	
Decachlorobiphenyl	21.30	89.9	35 - 140	10.05	10.049	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	21.30	79.3	35 - 140	8.525	8.525	0.0000	+/-0.030	
Matrix Spike (9L01006-MS1)	ug/Kg dry			Lab File ID:	011F1101.D	Analyzed: 12	/02/09 21:09	
Tetrachloro-m-xylene	21.30	87.9	70 - 125	4.218	4.219	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	21.30	148	70 - 125	3.506	3.506	0.0000	+/-0.030	*
Decachlorobiphenyl	21.30	105	55 - 130	10.05	10.049	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	21.30	82.5	55 - 130	8.523	8.525	-0.0020	+/-0.030	
Matrix Spike Dup (9L01006-MS	SD1) ug/Kg di	y		Lab File ID:	012F1201.D	Analyzed: 12	/02/09 21:27	
Tetrachloro-m-xylene	21.30	89.6	70 - 125	4.218	4.219	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	21.30	107	70 - 125	3.508	3.506	0.0020	+/-0.030	
Decachlorobiphenyl	21.30	91.5	55 - 130	10.051	10.049	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	21.30	77.2	55 - 130	8.523	8.525	-0.0020	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY SW8081A

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

Sequence: <u>9L33706</u> Instrument: <u>GL-ECD4</u>

Calibration: 9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9L33706-0	CCV2) ug/L			Lab File ID:	019F1901.D	Analyzed: 12	/02/09 23:37	
Tetrachloro-m-xylene	100.0	112	80 - 120	4.218	4.219	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	92.9	80 - 120	3.506	3.506	0.0000	+/-0.030	
Decachlorobiphenyl	100.0	119	80 - 120	10.05	10.049	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	100.0	121	80 - 120	8.525	8.525	0.0000	+/-0.030	*

LCS / LCS DUPLICATE RECOVERY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

Matrix: Solid

Batch: 9L01006 Laboratory ID: 9L01006-BS1

Preparation: EXT 3546 Initial/Final: 15 g / 5 mL

reparation. <u>LX1 3340</u>		11 5 7 5 1115		
ANALYTE	SPIKE ADDED (ug/Kg wet)	LCS CONCENTRATION (ug/Kg wet)	LCS % REC.	QC LIMITS REC.
4,4'-DDD	33.33	37.59	113	30 - 135
4,4'-DDD [2C]	33.33	34.02	102	30 - 135
4,4'-DDE	33.33	38.46	115	70 - 125
4,4'-DDE [2C]	33.33	34.00	102	70 - 125
4,4'-DDT	33.33	44.14	132	45 - 140
4,4'-DDT [2C]	33.33	40.14	120	45 - 140
Aldrin	33.33	34.02	102	45 - 140
Aldrin [2C]	33.33	26.73	80.2	45 - 140
alpha-BHC	33.33	34.00	102	60 - 125
alpha-BHC [2C]	33.33	25.44	76.3	60 - 125
alpha-Chlordane	33.33	35.35	106	65 - 120
alpha-Chlordane [2C]	33.33	28.06	84.2	65 - 120
beta-BHC	33.33	35.38	106	60 - 125
beta-BHC [2C]	33.33	25.66	77.0	60 - 125
delta-BHC	33.33	38.27	115	55 - 130
delta-BHC [2C]	33.33	28.15	84.5	55 - 130
Dieldrin	33.33	34.86	105	65 - 125
Dieldrin [2C]	33.33	28.56	85.7	65 - 125
Endosulfan I	33.33	33.43	100	15 - 135
Endosulfan I [2C]	33.33	35.06	105	15 - 135
Endosulfan II	33.33	35.09	105	35 - 140
Endosulfan II [2C]	33.33	27.81	83.4	35 - 140
Endosulfan sulfate	33.33	36.29	109	60 - 135
Endosulfan sulfate [2C]	33.33	30.82	92.5	60 - 135
Endrin	33.33	45.78	137	60 - 135
Endrin [2C]	33.33	37.26	112	60 - 135
Endrin aldehyde	33.33	29.11	87.3	35 - 145
Endrin aldehyde [2C]	33.33	28.67	86.0	35 - 145
Endrin ketone	33.33	33.11	99.3	65 - 135
Endrin ketone [2C]	33.33	27.26	81.8	65 - 135

LCS / LCS DUPLICATE RECOVERY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

Matrix: <u>Solid</u>

Batch: 9L01006 Laboratory ID: 9L01006-BS1

Preparation: EXT 3546 Initial/Final: 15 g / 5 mL

ANALYTE	SPIKE ADDED (ug/Kg wet)	LCS CONCENTRATION (ug/Kg wet)	LCS % REC.	QC LIMITS REC.
gamma-BHC (Lindane)	33.33	34.62	104	60 - 125
gamma-BHC (Lindane) [2C]	33.33	25.98	77.9	60 - 125
gamma-Chlordane	33.33	35.35	106	65 - 125
gamma-Chlordane [2C]	33.33	28.72	86.2	65 - 125
Heptachlor	33.33	38.30	115	50 - 140
Heptachlor [2C]	33.33	28.02	84.0	50 - 140
Heptachlor epoxide	33.33	34.28	103	65 - 130
Heptachlor epoxide [2C]	33.33	27.51	82.5	65 - 130
Methoxychlor	33.33	43.08	129	55 - 145
Methoxychlor [2C]	33.33	38.46	115	55 - 145
Chlordane (tech)		1.70 U	0	50 - 150
Chlordane (tech) [2C]		1.70 U	0	50 - 150
Toxaphene		33.0 U	0	50 - 150
Toxaphene [2C]		33.0 U	0	50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8081A

NBG-Topsoil

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

<u>9L01006</u>

% Solids:

78.24

Source Sample Name:

<u>0911230-02</u>

ANALYTE	SPIKE ADDED (ug/Kg dry)	SAMPLE CONCENTRATION (ug/Kg dry)	MS CONCENTRATION (ug/Kg dry)	MS % REC.	Q	QC LIMITS REC.
4,4'-DDD	42.61	ND	41.57	97.6		30 - 135
4,4'-DDE	42.61	ND	44.78	105		70 - 125
4,4'-DDT	42.61	ND	49.31	116		45 - 140
Aldrin	42.61	ND	36.11	84.8		45 - 140
alpha-BHC	42.61	0.3757	37.75	87.7		60 - 125
alpha-Chlordane	42.61	ND	38.26	89.8		65 - 120
beta-BHC	42.61	0.6769	38.81	89.5		60 - 125
delta-BHC	42.61	ND	38.96	91.4		55 - 130
Dieldrin	42.61	ND	38.55	90.5		65 - 125
Endosulfan I	42.61	1.233	37.56	85.3		15 - 135
Endosulfan II	42.61	ND	33.30	78.1		35 - 140
Endosulfan sulfate	42.61	0.3213	38.06	88.6		60 - 135
Endrin	42.61	ND	54.18	127		60 - 135
Endrin aldehyde	42.61	ND	26.69	62.7		35 - 145
Endrin ketone	42.61	ND	34.30	80.5		65 - 135
gamma-BHC (Lindane)	42.61	0.4135	38.51	89.4		60 - 125
gamma-Chlordane	42.61	0.2900	39.26	91.5		65 - 125
Heptachlor	42.61	ND	43.00	101		50 - 140
Heptachlor epoxide	42.61	0.5573	38.14	88.2		65 - 130
Methoxychlor	42.61	ND	44.99	106		55 - 145
Chlordane (tech)		ND	2.17 U	0		50 - 150
Toxaphene		ND	42.2 U	0		50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY SW8081A

NBG-Topsoil

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Solid</u>

Batch:

<u>9L01006</u>

% Solids:

78.24

Source Sample Name:

<u>0911230-02</u>

ANALYTE	SPIKE ADDED (ug/Kg dry)	SAMPLE CONCENTRATION (ug/Kg dry)	MS CONCENTRATION (ug/Kg dry)	MS % REC.	Q	QC LIMITS REC.
4,4'-DDD [2C]	42.61	ND	30.77	72.2		30 - 135
4,4'-DDE [2C]	42.61	ND	33.94	79.7		70 - 125
4,4'-DDT [2C]	42.61	0.4490	39.15	90.8		45 - 140
Aldrin [2C]	42.61	0.2740	27.45	63.8		45 - 140
alpha-BHC [2C]	42.61	2.445	26.21	55.8	N	60 - 125
alpha-Chlordane [2C]	42.61	0.8893	27.12	61.6	N	65 - 120
beta-BHC [2C]	42.61	0.3305	24.70	57.2	N	60 - 125
delta-BHC [2C]	42.61	0.2668	26.98	62.7		55 - 130
Dieldrin [2C]	42.61	6.859	29.58	53.3	N	65 - 125
Endosulfan I [2C]	42.61	ND	33.13	77.7		15 - 135
Endosulfan II [2C]	42.61	ND	25.63	60.2		35 - 140
Endosulfan sulfate [2C]	42.61	ND	25.40	59.6	N	60 - 135
Endrin [2C]	42.61	ND	34.40	80.7		60 - 135
Endrin aldehyde [2C]	42.61	ND	20.35	47.8		35 - 145
Endrin ketone [2C]	42.61	ND	24.50	57.5	N	65 - 135
gamma-BHC (Lindane) [2C]	42.61	0.2242	26.45	61.5		60 - 125
gamma-Chlordane [2C]	42.61	ND	27.50	64.5	N	65 - 125
Heptachlor [2C]	42.61	1.014	30.83	70.0		50 - 140
Heptachlor epoxide [2C]	42.61	0.5932	27.87	64.0	N	65 - 130
Methoxychlor [2C]	42.61	ND	35.57	83.5		55 - 145
Chlordane (tech) [2C]		ND	2.17 U	0		50 - 150
Toxaphene [2C]		ND	42.2 U	0		50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY SW8081A

NBG-Topsoil

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L01006

% Solids:

78.24

Source Sample Name:

0911230-02

	SPIKE	MSD	MSD	2.4		QC	LIMITS
ANALYTE	ADDED (ug/Kg dry)	CONCENTRATION (ug/Kg dry)	% REC. #	% RPD	Q	RPD	REC.
4,4'-DDD	42.61	39.83	93.5	4.27		30	30 - 135
4,4'-DDE	42.61	43.67	103	2.51		30	70 - 125
4,4'-DDT	42.61	47.35	111	4.05		30	45 - 140
Aldrin	42.61	36.12	84.8	0.0243		30	45 - 140
alpha-BHC	42.61	37.75	87.7	0.00317		30	60 - 125
alpha-Chlordane	42.61	37.48	88.0	2.05		30	65 - 120
beta-BHC	42.61	38.64	89.1	0.443		30	60 - 125
delta-BHC	42.61	40.31	94.6	3.42		30	55 - 130
Dieldrin	42.61	38.00	89.2	1.46		30	65 - 125
Endosulfan I	42.61	36.72	83.3	2.26		30	15 - 135
Endosulfan II	42.61	32.57	76.4	2.20		30	35 - 140
Endosulfan sulfate	42.61	38.79	90.3	1.91		30	60 - 135
Endrin	42.61	52.49	123	3.18		30	60 - 135
Endrin aldehyde	42.61	27.34	64.2	2.37		30	35 - 145
Endrin ketone	42.61	32.91	77.3	4.14		30	65 - 135
gamma-BHC (Lindane)	42.61	39.21	91.1	1.79		30	60 - 125
gamma-Chlordane	42.61	38.46	89.6	2.08		30	65 - 125
Heptachlor	42.61	43.34	102	0.787		30	50 - 140
Heptachlor epoxide	42.61	37.90	87.7	0.628		30	65 - 130
Methoxychlor	42.61	41.89	98.3	7.13		30	55 - 145
Chlordane (tech)		2.17 U	0			30	50 - 150
Toxaphene		42.2 U	0			30	50 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY SW8081A

NBG-Topsoil

Laboratory:

Empirical Laboratories, LLC

SDG:

<u>0911230</u>

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Solid</u>

Batch:

9L01006

% Solids:

78.24

Source Sample Name:

0911230-02

	SPIKE	MSD	MSD			QC	LIMITS
ANALYTE	ADDED (ug/Kg dry)	CONCENTRATION (ug/Kg dry)	% REC. #	% RPD	Q	RPD	REC.
4,4'-DDD [2C]	42.61	29.53	69.3	4.12		30	30 - 135
4,4'-DDE [2C]	42.61	34.20	80.3	0.786		30	70 - 125
4,4'-DDT [2C]	42.61	39.13	90.8	0.0666		30	45 - 140
Aldrin [2C]	42.61	27.25	63.3	0.738		30	45 - 140
alpha-BHC [2C]	42.61	26.48	56.4	1.01	N	30	60 - 125
alpha-Chlordane [2C]	42.61	27.30	62.0	0.644	N	30	65 - 120
beta-BHC [2C]	42.61	24.61	57.0	0.362	N	30	60 - 125
delta-BHC [2C]	42.61	27.93	64.9	3.45		30	55 - 130
Dieldrin [2C]	42.61	30.72	56.0	3.80	N	30	65 - 125
Endosulfan I [2C]	42.61	33.45	78.5	0.965		30	15 - 135
Endosulfan II [2C]	42.61	26.11	61.3	1.86		30	35 - 140
Endosulfan sulfate [2C]	42.61	27.01	63.4	6.16		30	60 - 135
Endrin [2C]	42.61	32.73	76.8	4.99		30	60 - 135
Endrin aldehyde [2C]	42.61	21.24	49.8	4.26		30	35 - 145
Endrin ketone [2C]	42.61	24.38	57.2	0.470	N	30	65 - 135
gamma-BHC (Lindane) [2C]	42.61	26.81	62.4	1.38		30	60 - 125
gamma-Chlordane [2C]	42.61	28.10	66.0	2.16		30	65 - 125
Heptachlor [2C]	42.61	29.99	68.0	2.77		30	50 - 140
Heptachlor epoxide [2C]	42.61	27.97	64.3	0.367	N	30	65 - 130
Methoxychlor [2C]	42.61	34.16	80.2	4.06		30	55 - 145
Chlordane (tech) [2C]		2.17 U	0			30	50 - 150
Toxaphene [2C]		42.2 U	0			30	50 - 150

PREPARATION BATCH SUMMARY

SW8081A

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Batch:

<u>9L01006</u>

Batch Matrix:

Solid

Preparation:

EXT_3546

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NBG-Backfill	0911230-01	12/01/09 11:00	15.00	5.00
NBG-Topsoil	0911230-02	12/01/09 11:00	15.00	5.00
Blank	9L01006-BLK1	12/01/09 11:00	15.00	5.00
LCS	9L01006-BS1	12/01/09 11:00	15.00	5.00
NBG-Topsoil	9L01006-MS1	12/01/09 11:00	15.00	5.00
NBG-Topsoil	9L01006-MSD1	12/01/09 11:00	15.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 0911230

Client: Arcadis (A285) Project: Radford Army Ammunition Plant

 Matrix:
 Laboratory ID:
 9L01006-BLK1
 File ID:
 007R0701.D

 Sampled:
 Prepared:
 12/01/09 11:00
 Analyzed:
 12/02/09 19:55

Solids: Preparation: <u>EXT_3546</u> Dilution:

Batch:	<u>9L01006</u>	Sequence:	9L33706		Calibration:	9310003	Instrument:	GL-ECD4
CAS NO.	COMPOUND			CON	NC. (ug/Kg wet)	MDL	MRL	Q
72-54-8	4,4'-DDD					0.170	0.670	U
72-55-9	4,4'-DDE					0.170	0.670	U
50-29-3	4,4'-DDT					0.170	0.670	U
309-00-2	Aldrin					0.110	0.330	U
319-84-6	alpha-BHC					0.110	0.330	U
5103-71-9	alpha-Chlordane					0.110	0.330	U
319-85-7	beta-BHC					0.110	0.330	U
319-86-8	delta-BHC					0.110	0.330	U
60-57-1	Dieldrin					0.170	0.670	U
959-98-8	Endosulfan I					0.110	0.330	U
33213-65-9	Endosulfan II					0.170	0.670	U
1031-07-8	Endosulfan sulfa	te				0.170	0.670	U
72-20-8	Endrin					0.170	0.670	U
7421-93-4	Endrin aldehyde					0.170	0.670	U
53494-70-5	Endrin ketone					0.170	0.670	U
58-89-9	gamma-BHC (Li	ndane)				0.110	0.330	U
5566-34-7	gamma-Chlordan	ne				0.110	0.330	U
76-44-8	Heptachlor					0.110	0.330	U
1024-57-3	Heptachlor epoxi	ide				0.110	0.330	U
72-43-5	Methoxychlor					0.110	0.330	U
57-74-9	Chlordane (tech)					0.570	1.70	U
8001-35-2	Toxaphene					11.0	33.0	U
SYSTEM MO	NITORING COM	1POUND	ADDED (ug	/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-	Tetrachloro-m-xylene 16.6		16.6	7	16.57	99.4	70 - 125	
Tetrachloro-m-			16.6	7	12.94	77.7	70 - 125	
Decachlorobiph			16.6	7	21.23	127	55 - 130	
Decachlorobiph	nenyl [2C]		16.6	7	20.20	121	55 - 130	

^{*} Values outside of QC limits

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Soil</u>

Laboratory ID:

0911230-01

File ID:

013F1301.D

Sampled:

11/24/09 15:30

Prepared:

12/02/09 09:50

Analyzed:

12/04/09 16:05

Solids:

<u>83.65</u>

Preparation:

EXT_8151

Dilution:

<u>1</u>

Batch:	9L01005	Sequence:	<u>9L34314</u>		Calibration:	9342007	Instrument:	GL-ECD3
CAS NO.	COMPOUND			CON	IC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T					2.99	5.98	U
93-72-1	2,4,5-TP (Silver	x)				2.99	5.98	U
94-75-7	2,4-D					29.9	59.8	U
94-82-6	2,4-DB					29.9	59.8	U
75-99-0	Dalapon					74.7	149	U
1918-00-9	Dicamba					2.99	5.98	U
120-36-5	Dichloroprop					29.9	59.8	U
88-85-7	Dinoseb					14.9	29.9	U
94-74-6	МСРА					2990	5980	U
7085-19-0	МСРР					2990	5980	U
SYSTEM MONITORING COMPOUND		ADDED (ug	/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q	
	nenylacetic acid		119.	5	103.1	86.3	30 - 120	
2,4-Dichlorophenylacetic acid [2C]			119.:	5	96.00	80.3	30 - 120	

^{*} Values outside of QC limits

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

<u>Soil</u>

Laboratory ID:

0911230-02

File ID:

016R1601.D

Sampled:

11/24/09 14:30

Prepared:

12/02/09 09:50

Analyzed:

12/04/09 17:21

Solids:

78.24

Preparation:

EXT_8151

Dilution:

1

Solids:	<u> 18.24</u>	Trop	ui uiioii.		2151		_	
Batch:	9L01005	Sequence:	<u>9L34314</u>		Calibration:	<u>9342007</u>	Instrument:	GL-ECD3
CAS NO.	COMPOUN	D		CON	IC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T					3.20	6.39	U
93-70-3	2,4,5-TP (Silv	ex)			11.3	3.20	6.39	P
94-75-7	2,4-D					32.0	63.9	U
94-82-6	2,4-DB					32.0	63.9	U
75-99-0	Dalapon			<u> </u>		79.9	160	U
1918-00-9	Dicamba		-		15.3	3.20	6.39	P
120-36-5	Dichloroprop					32.0	63.9	U
88-85-7	Dinoseb					16.0	32.0	U
94-74-6	MCPA					3200	6390	U
7085-19-0	MCPP					3200	6390	U
		OMPOUND	ADDED (ug	g/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
	SYSTEM MONITORING COMPOUND ADDED (control of the system) 2,4-Dichlorophenylacetic acid 127		127.5	8	117.3	91.7	30 - 120	
		127.5		81.08	63.4	30 - 120		
								

^{*} Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY SW8151A

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L01005

Laboratory ID:

9L01005-BS1

Preparation:

EXT_8151

Initial/Final:

10 g / 10 mL

	SPIKE	LCS	LCS	QC
	ADDED	CONCENTRATION (ug/Kg wet)	% REC.	LIMITS REC.
ANALYTE	(ug/Kg wet)			
2,4,5-T	20.00	22.77	114	45 - 135
2,4,5-T [2C]	20.00	28.03	140	45 - 135
2,4,5-TP (Silvex)	20.00	19.87	99.3	45 - 125
2,4,5-TP (Silvex) [2C]	20.00	20.39	102	45 - 125
2,4-D	200.0	189.2	94.6	35 - 145
2,4-D [2C]	200.0	181.6	90.8	35 - 145
2,4-DB	200.0	173.0	86.5	50 - 155
2,4-DB [2C]	200.0	168.5	84.3	50 - 155
Dalapon	500.0	-125 U-53.56	-0.7	10 - 110
Dalapon [2C]	500.0	-125 U- 52.32	-0 10,5	10 - 110
Dicamba	20.00	15.21	76.1	55 - 110
Dicamba [2C]	20.00	15.19	76.0	55 - 110
Dichloroprop	200.0	238.6	119	75 - 140
Dichloroprop [2C]	200.0	237.6	119	75 - 140
Dinoseb	100.0	40.10	40.1	5 - 130
Dinoseb [2C]	100.0	36.44	36.4	5 - 130
MCPA	20000	19000	95.0	30 - 115
MCPA [2C]	20000	18080	90.4	30 - 115
MCPP	20000	19320	96.6	35 - 135
MCPP [2C]	20000	19400	97.0	35 - 135

WV 12/10/09

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY SW8151A

NBG-Backfill

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L01005

% Solids:

83.65

Source Sample Name:

0911230-01

ANALYTE	SPIKE ADDED (ug/Kg dry)	SAMPLE CONCENTRATION (ug/Kg dry)	MS CONCENTRATION (ug/Kg dry)	MS % REC.	Q	QC LIMITS REC.
2,4,5-T	23.91	ND	34.16	143	N	45 - 135
2,4,5-TP (Silvex)	23.91	ND	24.61	103		45 - 125
2,4-D	239.1	ND	210.3	87.9		35 - 145
2,4-DB	239.1	ND	216.1	90.4		50 - 155
Dalapon	597.7	ND	80.24	13.4		10 - 110
Dicamba	23.91	ND	19.49	81.5		55 - 110
Dichloroprop	239.1	ND	278.1	116		75 - 140
Dinoseb	119.5	ND	41.15	34.4		5 - 130
MCPA	23910	ND	22270	93.1		30 - 115
МСРР	23910	ND	22720	95.0		35 - 135

	SPIKE	MSD	MSD			QC	LIMITS
ANALYTE	ADDED (ug/Kg dry)	CONCENTRATION (ug/Kg dry)	% REC. #	% RPD	Q	RPD	REC.
2,4,5-T	23.91	30.19	126	12.3		30	45 - 135
2,4,5-TP (Silvex)	23.91	22.22	92.9	10.2		30	45 - 125
2,4-D	239.1	201.2	84.2	4.39		30	35 - 145
2,4-DB	239.1	193.8	81.1	10.9		30	50 - 155
Dalapon	597.7	149 U 71.54	æ12.0	11.4	14 -	30	10 - 110
Dicamba	23.91	17.36	72.6	11.5		30	55 - 110
Dichloroprop	239.1	264.7	111	4.94		30	75 - 140
Dinoseb	119.5	36.35	30.4	12.4		30	5 - 130
MCPA	23910	20400	85.3	8.74		30	30 - 115
MCPP	23910	21320	89.2	6.37		30	35 - 135

N-12/10/19

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY SW8151A

NBG-Backfill

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Solid

Batch:

9L01005

% Solids:

83.65

Source Sample Name:

0911230-01

ANALYTE	SPIKE ADDED (ug/Kg dry)	SAMPLE CONCENTRATION (ug/Kg dry)	MS CONCENTRATION (ug/Kg dry)	MS % REC.	Q	QC LIMITS REC.
2,4,5-T [2C]	23.91	5.229	27.94	95.0		45 - 135
2,4,5-TP (Silvex) [2C]	23.91	ND	25.28	106		45 - 125
2,4-D [2C]	239.1	ND	211.8	88.6		35 - 145
2,4-DB [2C]	239.1	ND	201.5	84.3		50 - 155
Dalapon [2C]	597.7	ND OK ND	149 U 74.68	⊕ /2.5	₩	10 - 110
Dicamba [2C]	23.91	ND	18.09	75.7		55 - 110
Dichloroprop [2C]	239.1	ND	272.0	114		75 - 140
Dinoseb [2C]	119.5	ND	38.32	32.1		5 - 130
MCPA [2C]	23910	ND	21610	90.4		30 - 115
MCPP [2C]	23910	ND	22290	93.2		35 - 135

	SPIKE					QC LIMITS		
ANALYTE	ADDED (ug/Kg dry)	CONCENTRATION (ug/Kg dry)	% REC. #	% RPD	Q	RPD	REC.	
2,4,5-T [2C]	23.91	28.97	99.3	3.63		30	45 - 135	
2,4,5-TP (Silvex) [2C]	23.91	23.77	99.4	6.19		30	45 - 125	
2,4-D [2C]	239.1	202.4	84.6	4.53		30	35 - 145	
2,4-DB [2C]	239.1	189.8	79.4	5.96		30	50 - 155	
Dalapon [2C]	597.7	149 U 7/.63	- 0 123	4.17	14	30	10 - 110	
Dicamba [2C]	23.91	17.35	72.6	4.18		30	55 - 110	
Dichloroprop [2C]	239.1	264.8	111	2.67		30	75 - 140	
Dinoseb [2C]	119.5	34.08	28.5	11.7		30	5 - 130	
MCPA [2C]	23910	20000	83.7	7.73		30	30 - 115	
MCPP [2C]	23910	21410	89.6	4.01		30	35 - 135	

12/10/09

PREPARATION BATCH SUMMARY SW8151A

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Batch:

9L01005

Batch Matrix:

Solid

Preparation:

EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NBG-Backfill	0911230-01	12/02/09 09:50	10.00	10.00
NBG-Topsoil	0911230-02	12/02/09 09:50	10.00	10.00
Blank	9L01005-BLK1	12/02/09 09:50	10.00	10.00
LCS	9L01005-BS1	12/02/09 09:50	10.00	10.00
NBG-Backfill	9L01005-MS1	12/02/09 09:50	10.00	10.00
NBG-Backfill	9L01005-MSD1	12/02/09 09:50	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:

Empirical Laboratories, LLC

SDG:

0911230

Client:

Arcadis (A285)

Project:

Radford Army Ammunition Plant

Matrix:

Laboratory ID:

9L01005-BLK1

File ID:

<u>011R1101.D</u>

Sampled:

Prepared:

12/02/09 09:50

Analyzed:

12/04/09 15:11

Solids:

Preparation:

EXT_8151

Dilution:

Batch:	<u>9L01005</u>	Sequence:	uence: <u>9L34314</u> Calibration:		9342007	Instrument:	GL-ECD3	
CAS NO.	COMPOUNI	O		CON	IC. (ug/Kg wet)	MDL	MRL	Q
93-76-5	2,4,5-T					2.50	5.00	U
93-72-1	2,4,5-TP (Silve	ex)				2.50	5.00	U
94-75-7	2,4-D					25.0	50.0	U
94-82-6	2,4-DB					25.0	50.0	U
75-99-0	Dalapon					62.5	125	U
1918-00-9	Dicamba					2.50	5.00	U
120-36-5	Dichloroprop					25.0	50.0	U
88-85-7	Dinoseb					12.5	25.0	U
94-74-6	MCPA					2500	5000	U
7085-19-0	MCPP					2500	5000	U
SYSTEM MOI	NITORING CC	MPOUND	ADDED (ug/	Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid		100.0)	86.96	87.0	30 - 120		
2,4-Dichloroph	enylacetic acid	[2C]	100.0)	81.82	81.8	30 - 120	

^{*} Values outside of QC limits

Appendix E	
Laboratory Data Validation F	Review



Analytical data was evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (July 2002), "USEPA Region III National Functional Guidelines for Organic Data Review" (September 1994), "USEPA Region III National Functional Guidelines for Inorganic Data Review" (June 1995), site-specific requirements defined in *Radford Master Work Plan* (URS, 2003), and site-specific requirements defined in the *Quality Assurance Plan Addendum* (Arcadis, 2008). The validation presented in this review was performed at the RAAP defined Level I.

The data review summarized in this report includes a review of all sample collection documentation and the electronic data validation of the analytical data housed in the project database. Sample collection documentation included sample collection logs and chains of custody. The electronic data validation was performed utilizing the EQuIS Data Qualification Module (DQM). DQM checks for the following parameters:

- Holding times and preservation;
- Blank contamination:
 - 1. Method blanks.
 - 2. Trip blanks,
 - 3. Equipment blanks;
- Matrix spike and Duplicate sample recovery;
- Matrix Spike and Matrix Spike Duplicate relative percent differences;
- Laboratory Control Sample and Duplicate recovery;
- Laboratory Control Sample and Duplicate relative percent differences;
- Surrogate recovery (organic analyses only); and
- Field duplicate relative percent difference.

Manually review was performed on the following items:

- Sample dilutions and reporting limits;
- Case Narratives; and
- Total versus dissolved metals concentrations.

Reviewed data was generated by Empirical Laboratories. Data qualifiers were applied electronically to the database with any additional qualifiers added manually. A summary of the data as amended by data qualifiers is included with the original hard copy reports. The attached table summarizes the data that were qualified due to QC deficiencies. The table indicates compounds/analytes qualified based on electronic and manual validation. Refer to the associated method section of the validation checklist for a detailed explanation of qualification. All other data in this SDG are considered usable as reported.



The following list of data qualifiers and definitions were applied in accordance with qualification criteria defined in the above guidance documents:

- UB Compound/analyte detected in blank or associated blank, qualified as a non-detect at listed value.
- J The analyte was positively identified, but the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reporting limit; however, the reported quantitation limit is approximate and may, or may not represent the actual limit of quantitation necessary to accurately and precisely measure analyte in the sample.
- R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria; and the presence or absence of the analyte cannot be verified.

DQM RUN BY:	Rachelle Borne	01/26/10
REVIEW PERFORMED BY:	Rachelle Borne	01/26/10
SIGNATURE:	Samue Ban	01/26/10
PEER REVIEW:	I nee gue Towell	1/28/10



The following samples were included in this SDG:

_		Sample	
SDG	Sample ID	Date	Parent sample
0912138	NBG-XRF002(0-0.5)	12/8/2009	
0912138	NBG-XRF005(0-0.5)	12/8/2009	
0912138	NBG-XRF007(0-0.5)	12/8/2009	
0912138	NBG-XRF010(1-1.5)	12/9/2009	
0912138	NBG-XRF013(1-1.5)	12/9/2009	
0912138	NBG-XRF015(1-1.5)	12/9/2009	
0912138	NBG-XRF017(1-1.5)	12/9/2009	
0912138	NBG-XRF020(1-1.5)	12/9/2009	
0912138	NBG-XRF021(1-1.5)	12/9/2009	
0912138	NBG-XRF022(1-1.5)	12/9/2009	
0912138	NBG-XRF023B(3-3.5)	12/9/2009	
0912138	NBG-XRF025(4-4.5)	12/9/2009	
0912138	NBG-XRF026(1-1.5)	12/9/2009	
0912138	NBG-XRF028(1-1.5)	12/9/2009	
0912138	NBG-XRF031(1-1.5)	12/10/2009	
0912138	NBG-XRFDUP001(3-3.5)	12/9/2009	NBG-XRF023B(3-3.5)



ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by lab sample custodian		X		X	
8. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

Comments:

All samples were reported on a dry weight basis.



METALS

				fication
	DQM D	DQM Deficiency		plied
Items Reviewed	No	Yes	No	Yes
1. Holding times	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment blanks	NA		NA	
5. Laboratory control sample (LCS)				
A. LCS accuracy (%R)	DQM		DQM	
B. LCS duplicate (LCSD) %R	NA		NA	
C. LCS/LCSD precision (RPD)	NA		NA	
6. Matrix spike				
A. Matrix spike (MS) %R	NA		NA	
B. Matrix spike duplicate (MSD) %R	NA		NA	
C. MS/MSD RPD	NA		NA	
7. Total vs. dissolved	NA		NA	
8. Field duplicate sample RPD		DQM		DQM

Comments:

This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed utilizing Methods 6010B and 7470A.

- 2. Several samples required dilutions for lead.
- 8. Sample location NBG-XRFDUP001(3-3.5) was collected as a field duplicate of NBG-XRF023B(3-3.5) The RPD for lead was above the control limit. The parent and the duplicate are qualified as estimated for lead.



DATA VALIDATION QUALIFICATION SUMMARY

Sample ID	Parameter	Result	Units	Qualifier	Reason
NBG-XRFDUP001(3-3.5)	Lead	362.0	mg/kg	J	FD RPD
NBG-XRF023B(3-3.5)	Lead	59.4	mg/kg	J	FD RPD

Qualifier Definitions:

- J Result is considered to be estimated at the value reported.
- UJ Result is considered not detected but estimated due to QC deficiencies.
- UB Non-detect at the Reporting Limit or at the concentration reported if greater than the RL due to associated blank contamination.
- R Result is qualified as unusable, data point is rejected.

Explanation/Notes: