FINAL REPORT
FOR THE
PRE-REMEDIATION VOLUME UNCERTAINTY REDUCTION SUBSURFACE SOIL SAMPLING PROJECT
AT THE PAINESVILLE FUSRAP SITE IN PAINESVILLE, OHIO

Contract No. **W912P4-07-D-0009, D.O. 0002**

Prepared for:

U.S. ARMY ENGINEER DISTRICT, BUFFALO

Buffalo, New York

Formerly Utilized Sites Remedial Action Program

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DATA REPORT APPROVALS

By their specific signature, the undersigned certify that they reviewed and provided comments on this Data Report for activities at the Painesville FUSRAP Site, Painesville, Ohio.

APPROVED BY:

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ACRONYMS, ABBREVIATIONS, AND SYMBOLS

µR/hr	microRoentgen per hour
ACL	Acid Conveyance Line
ALARA	As Low as Reasonably Achievable
AM	Action Memorandum
ANL	Argonne National Laboratory
ARS	American Radiation Services
ARSEC	American Remediation Solutions and Environmental Corporation
ASTM	American Society for Testing and Materials
Ba	Barium
bgs	Below Ground Surface
BNI	Bechtel National Inc.
BZ	Breathing Zone
Cabrera	Cabrera Services, Inc.
CEC	Civil and Environmental Consultants, Inc
CFR	*Code of Federal Regulations*
CO	Carbon Monoxide
COC	Contaminant of Concern
COR	Contracting Officer's Representative
cpm	counts per minute
CSM	Conceptual Site Model
DAW	Dry Active Waste
DCGL	Derived Concentration Guideline Level
$DCGL_{emc}$	Derived Concentration Guideline Level, Elevated Measurement Comparison
$DCGL_{w}$	Derived Concentration Guideline Level, Wilcoxon Rank Sum
DHG	Downhole Gamma Logging
DO	Delivery Order
DOE	U.S. Department of Energy
DQO	Data Quality Objective
DPM	disintegrations per minute
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
FIS	Frequency-Induction Survey
FP&E	Fairport, Painesville, and Eastern Railroad
FUSRAP	Formerly Utilized Sites Remedial Action Program
ft	foot (feet)
FS	Feasibility Study
FSP	Field Sampling Plan
FSS	Final Status Survey
GPR	Ground-Penetrating Radar
GSA	General Services Administration
GWS	Gamma Walkover Survey
HDPE	High-Density Polyethylene
HSRPP	Health, Safety, and Radiation Protection Plan
IDW	Investigation-Derived Waste
kg	kilogram

km	kilometers
m, m²	meter(s), square meter(s)
MARSSIM	*Multi Agency Radiation Survey and Site Investigation Manual*
MHz	megahertz
mi	mile
mrem/yr	millirem per year
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAD83	North American Datum, 1983
NaI	Sodium Iodide
NGVD88	North American Vertical Datum, 1988
NIST	National Institute of Standards and Technology
NRC	U.S. Nuclear Regulatory Commission
OAC	Ohio Administrative Code
ORNL	Oak Ridge National Laboratory
OSHA	Occupational Safety and Health Administration
PAS	Personal Air Sampler
pCi	picoCurie(s)
pCi/g	picoCurie(s) per gram
PCB	polychlorinated biphenyl
PID	Photoionization Detector
PPE	personal protective equipment
ppm	parts per million
PVC	polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
Ra	Radium
RI/FS	Remedial Investigation/Feasibility Study
RCOC	Radiological Contaminant of Concern
ROD	Record of Decision
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SB	Soil Boring
SEC	Safety and Ecology Corporation
SOR	Sum of Ratios
SOW	Statement of Work
SU	Survey Unit
SVOA	Semivolatile Organic Analyte
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
Th	Thorium
TP	Test Pit
U	Uranium
USACE	U.S. Army Corps of Engineers
USACE–Buffalo	U.S. Army Corps of Engineers, Buffalo District

VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
VURS	Volume Uncertainty Reduction Subsurface Soil Sampling

1.0 EXECUTIVE SUMMARY

American Remediation Solutions and Environmental Corporation (ARSEC), a joint venture of American Radiation Services, Inc. (ARS) and Safety and Ecology Corporation (SEC), has been contracted by the U.S. Army Corps of Engineers – Buffalo District (USACE-Buffalo) under Contract No. W912P4-07-D-0009, Delivery Order (DO) 002 (USACE), to provide Health Physics services for the Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (hereafter referred to as the "Site") in Painesville, Ohio. This Site has been historically identified as containing various levels of residual radioactive material in soils and sediments from previous operations, including radium-226 (Ra-226), thorium-230 (Th-230), thorium-232 (Th-232), and uranium-238 (U-238). There have been several characterization efforts conducted previously to support ongoing remedial activities at the Site. However, a degree of uncertainty still exists regarding the volume of contaminated materials present. The purpose of the ARSEC fieldwork was to collect data of sufficient quality and quantity to assist in reducing this uncertainty. This document was prepared to present the results of the data collected during this site characterization effort.

The following conclusions and recommendations have been made as a result of this study:

- SOR $DCGL_w$ and $DCGL_{emc}$ values of <1 verify that contamination is not present at depth in the previously surveyed Class 2 areas on the eastern portion of the site.
- on the western portion of the site surrounding Areas A and H (previously remediated areas), SOR $DCGL_w$ and $DCGL_{emc}$ values of <1, verify that contamination did not extend vertically or horizontally past previously identified contamination boundaries.
- soil processing and sampling not be performed when DHG count rates are less than 15,723 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that SOR $DCGL_w$ values greater than zero were not obtained until a DHG count rate of 15,723 cpm was obtained.
- soil processing and sampling not be performed when test pit sidewall count rates are less than 11,794 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that the only test pit sidewall SOR $DCGL_w$ values greater than zero were obtained with a corresponding gross gamma count rate of 11,794 cpm.
- soil processing and sampling not be performed when test pit surface count rates are less than 5,206 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that SOR $DCGL_w$ values greater than zero were not obtained until a test pit surface count rate of 5,206 cpm was obtained.

2.0 INTRODUCTION

In May 2009, ARSEC conducted a biased volume uncertainty reduction sampling (VURS) program that focused on identifying the nature and extent of radiological contamination that remains at the Site following the completion of remedial activities by Cabrera Services, Inc. (Cabrera). This sampling program included the installation of 32 soil borings and 16 test pits on the western and eastern portions of the Site, respectively. It also included a geophysical investigation to locate the former Acid Conveyance Line (ACL) that is believed to run underneath the parking lot to the west of the former Administration Building. To ensure that the sampling and analysis activities were performed to the specifications identified by USACE-Buffalo in the Statement of Work (SOW) for the DO (USACE 2009), a Sampling and Analysis Plan (SAP) was developed by ARSEC and submitted to USACE for acceptance prior to commencement of the field activities. The sampling design outlined in the SAP Field Sampling Plan (FSP) [ARSEC 2009a] focused on obtaining data from discreet locations, as stipulated in the SOW, intended to bound the probable extent of residual radiological contamination. The ultimate goal of these activities, as stated in the SOW, was to aid the USACE-Buffalo development of estimates for the future remediation of the Site and to verify subsurface soil contamination does not exist in Class 2 areas previously surveyed and determined to be below Derived Concentration Guideline Levels (DCGLs).

Characterization data from this survey and sampling effort were collected using the following methods:

- subsurface core borings using sonic drilling methods to depths up to 14 feet (ft) below original ground surface (bgs);
- downhole gamma (DHG) logging at each soil boring location;
- biased subsurface soil samples from each of the 32 soil boring locations;
- biased surface soil samples obtained from the nominal 10-ft by 10-ft boundary of the 16 test pits;
- biased subsurface samples obtained from the walls and floors of the 16 test pits;
- direct gamma surveys of the walls and floors of the test pits; and
- offsite isotopic and Toxicity Characteristic Leaching Procedure (TCLP) analysis of soil samples.

A total of 96 subsurface field soil samples were collected from within the 32 soil boring locations, and 64 surface and subsurface soil samples were collected from the test pits. All of the collected samples were field screened using a 3-in. by 3-in. sodium iodide (NaI) detector and were sent to offsite analytical laboratories for radiochemistry and TCLP analyses. See Section 8.2, “Quality Assurance Samples,” for a discussion of regular and quality samples collected during this project.

Evaluation of the data from this VURS effort indicates that areas surveyed and sampled did not exhibit radiological contaminant of concern (RCOC) values above the established DCGLs for the site. Additionally, all sum of ratios (SORs) values were less than 1, indicating that proposed areas to be remediated have been properly bounded.

The following objectives of the VURS program outlined in the SAP (ARSEC 2009a) were also successfully achieved:

- The ACL's location beneath the parking lot on the west side of the former Administration Building was positively located using a combination of ground-penetrating radar (GPR) and frequency-induced utility locating technologies.
- The installation of Test Pit 004 in SU19 (PNV-SU19-TP004) led to the discovery that this suspect area was merely a 1.5 to 2.0-ft-deep concrete sump that exhibited no elevated radiological contamination.
- The eastern portion of the Site, the Class 2 units, did not exhibit any areas that had RCOCs above the DCGLs for the Site. All SOR values for the eastern portion of the site were less than 1.
- The western portion of the Site, bounding boreholes around the Class 1 survey units (SUs) did not exhibit any areas that had RCOCs above the DCGLs. All SOR values for boreholes in the western portion of the site were less than 1. This includes boreholes that bound the Class 1 SUs as well as boreholes located at distance from the Class 1 SUs.

2.1 Site Description

The Painesville FUSRAP Site is located at 720 Fairport Nursery Road, Painesville, Ohio, approximately 35.4 kilometers (km) [22 miles (mi)] northeast of Cleveland. The Site is located at approximately 41 degrees, 45 minutes north latitude, 81 degrees, 15 minutes west longitude, and is shown on the U.S. Geological Survey map of the Perry Quadrangle, Ohio-Lake County, 7.5-minute topographic series. The Site is currently owned by the Chemtura Corporation (Chemtura) [formerly the Uniroyal Chemical Company] and is bounded on the north by the Fairport, Painesville, and Eastern Railroad (FP&E), a subsidiary of Norfolk and Southern Railroad, on the west by property owned by Chemtura, on the south by Fairport Nursery Road, and on the east by Hardy Industrial Technologies (formerly Twin Rivers Technologies). Active and inactive industrial properties immediately surround the Painesville Site. Painesville Township Park, the Diamond Alkali Waste Lake hazardous waste site, and residential properties are located to the north, south, and northeast of the Site, respectively. The Grand River is located approximately 0.2 km (0.1 mi) southwest of Fairport Nursery Road and flows in a northwesterly direction toward Lake Erie. ***Figure 2-1*** provides a schematic of the Painesville area and shows the Site's proximity to the surrounding area. ***Figure 2-2*** shows the proposed locations of the Class 1 unit soil borings (west) and the Class 2 unit test pits (east). At one time the Site contained as many as 35 buildings and structures. Only one of the buildings, the former Administration Building, still remains as the other buildings were demolished.

In the early 1940s, the Defense Plant Corporation financed construction of a magnesium production facility in Painesville, Ohio, on property acquired by the Federal Government. In support of the World War II effort and later government operations, the Diamond Magnesium Company operated this facility from 1942 to 1953 for the General Services Administration (GSA). In 1963, the GSA sold the plant to the U.S. Rubber Company, which later became the Uniroyal Chemical Company (Uniroyal), then the Crompton Manufacturing Company, Inc., and finally Chemtura. Uniroyal produced nitrile rubber, polyvinyl chloride (PVC) nitrile rubber blends, and various polymers at the Site until it ceased operations in 1999. Uniroyal utilized several of the original Diamond Magnesium Company buildings for its operations and also built new buildings on the Site. Uniroyal constructed several landfills, impoundments, and lagoons for waste disposal purposes on adjacent properties surrounding the Site.

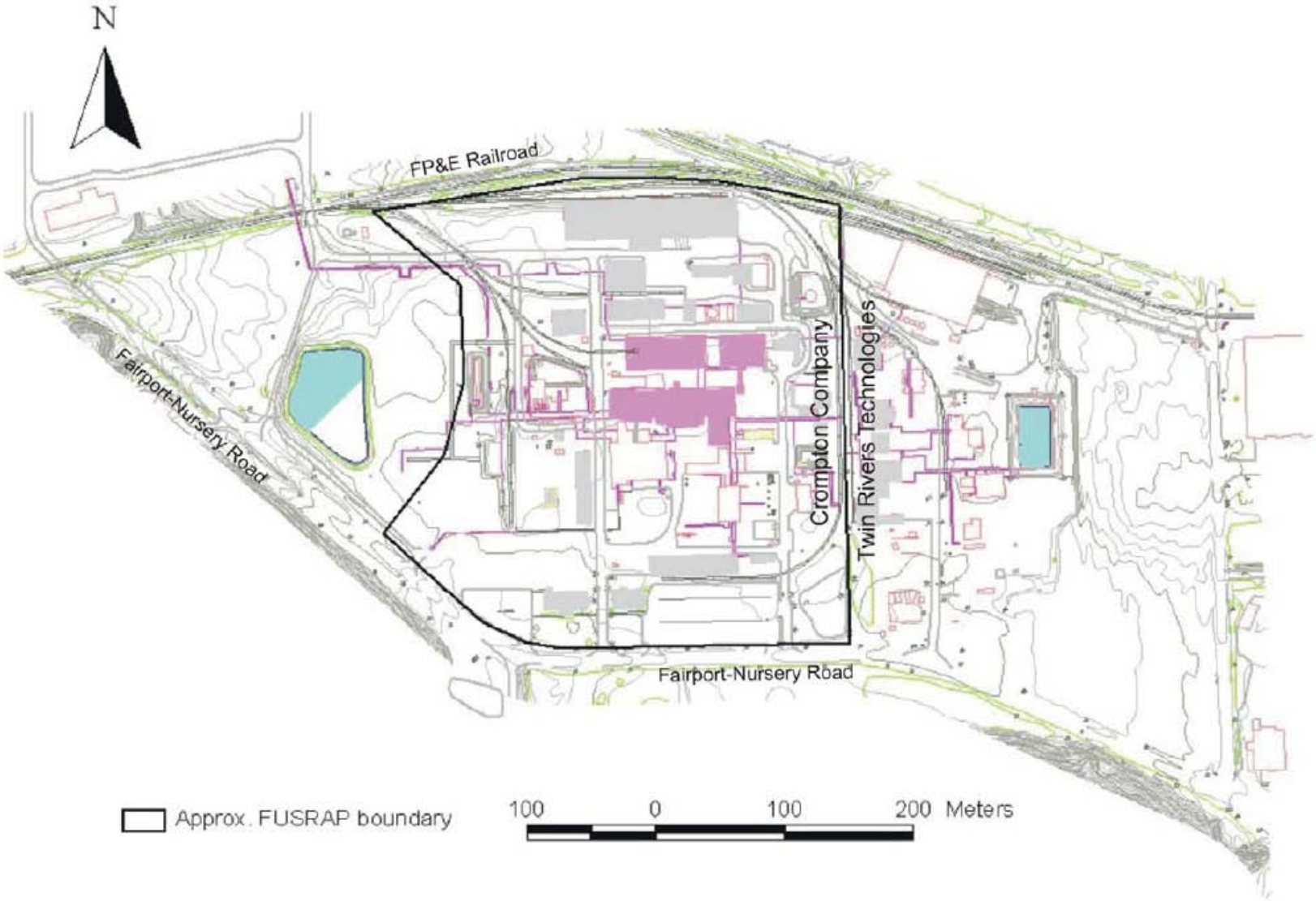

Figure 2-1 Historical Plan View of Painesville FUSRAP Site

(Note: Site owner is now Chemtura Corporation. Figure courtesy of Argonne National Laboratory)

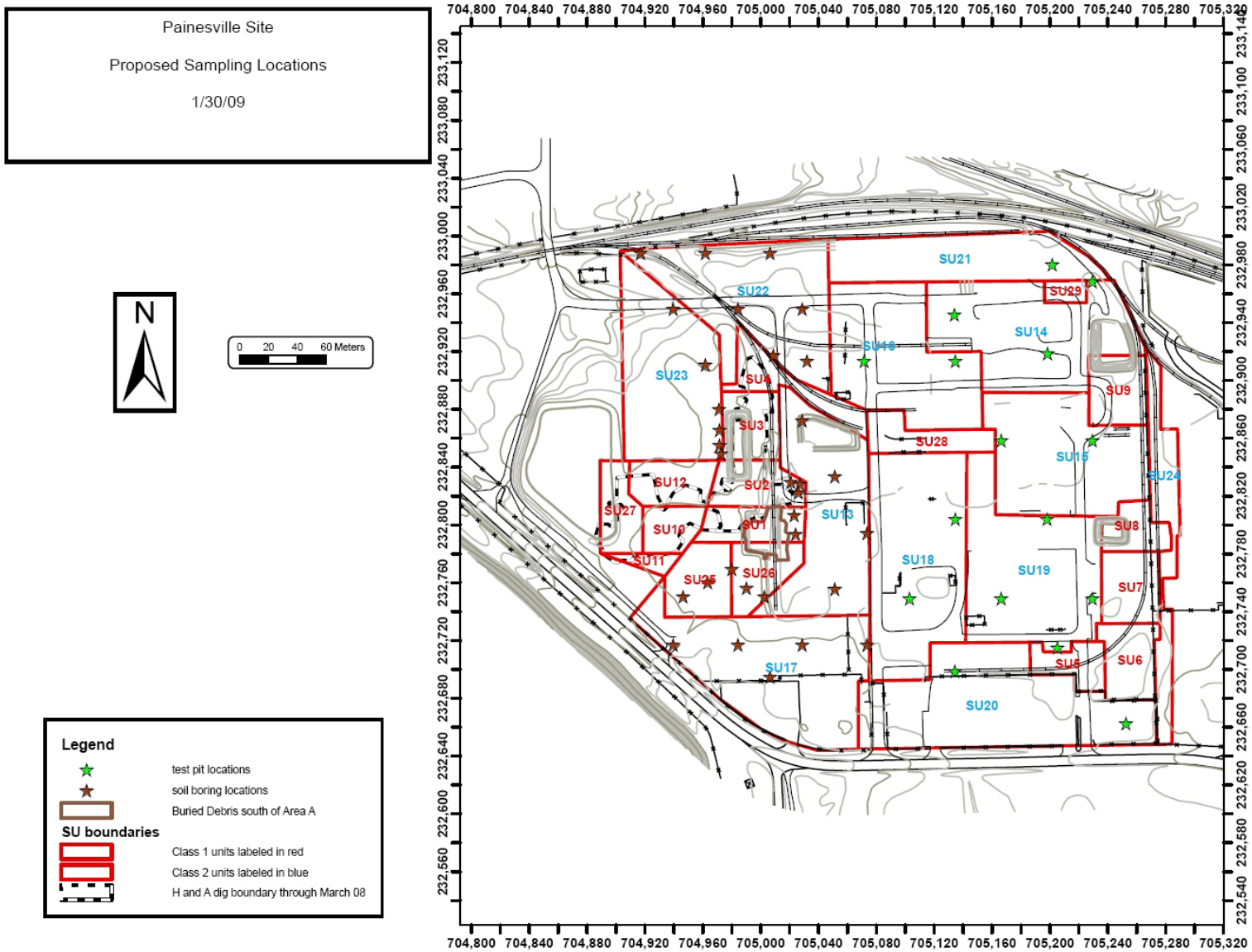

Figure 2-2 Proposed Locations for Soil Borings and Test Pits

Additional details on the Site history and information related to the various characterization activities previously performed at the Site can be found in the SAP (ARSEC 2009a) and in the following:

- USACE 1996, Sampling and Analysis Plan for the Painesville Site.
- USACE1998a, Characterization Report for the Painesville Site.
- USACE 1998b, Engineering Evaluation/Cost Analysis for the Painesville Site.
- USACE 2003, Remedial Investigation/Feasibility Study (RI/FS) Report.
- USACE 2005a, Final FS Addendum.
- USACE 2005b, VURS Sampling Plan.
- USACE 2006a, VURS Sampling Data Report.

2.2 Previous Site Investigations

On October 10–11, 1988, Oak Ridge National Laboratory (ORNL) performed a preliminary site evaluation of the Chemtura property. ORNL performed a gamma walkover survey (GWS) over the study area and collected soil samples for radiological analysis. During the survey, information was obtained concerning other portions of the property, which were addressed during subsequent field investigative activities.

ORNL returned to the Site in September 1990 to examine the property to the east adjacent to the railroad tracks (currently owned by Hardy Industrial Technologies) and to investigate areas that showed elevated gamma readings during the 1988 survey (ORNL 1990). The survey results indicated that elevated concentrations of radionuclides were found in both surface and subsurface soil in excess of U.S. Department of Energy (DOE) guidelines for release of a property without radiological restrictions (ORNL 1991). The primary contaminants of concern (COCs) were U-238, Th-230, and Ra-226, with activity levels as high as 76 picocuries per gram (pCi/g), 310 pCi/g, and 1,500 pCi/g, respectively.

In 1996, Bechtel National Incorporated (BNI), Science Applications International Corporation (SAIC), and Argonne National Laboratory (ANL), under contract to DOE, performed a detailed investigation of the Site. This investigation included ambient air sampling, dose rate measurements, building radiological surveys, GWS, groundwater sampling, geophysical surveys, surface water sampling, sediment sampling, ecological sampling, and soil sampling. The results of this study were documented in the Characterization Report for the Painesville Site (USACE 1998a).

In 1998, the USACE completed an Engineering Evaluation/Cost Analysis (EE/CA) to support a removal action at the Site. The EE/CA developed cleanup goals and evaluated several alternatives for addressing the radiological contamination detected at the Site. The selected alternative was documented in an Action Memorandum (AM), and the removal action was then conducted in the fall of 1998. Slightly more than 1,300 cubic yards were removed before the project was suspended due to the onset of winter conditions, and the discovery that the extent of contamination was greater than anticipated in the AM. During the removal action, samples were collected from soil that remained in place in the excavated area. These samples indicated that radiological contamination above the cleanup goals still existed beyond the excavation limits (USACE 1999).

In May 2003, USACE completed an RI/FS (USACE 2003). The RI/FS collected additional data on the areas of concern, conducted a Baseline Risk Assessment, and developed and evaluated remedial alternatives for the radiologically contaminated soil. These remedial alternatives included capping the

contamination in place and excavation with offsite disposal. In June 2005, the USACE completed an FS Addendum, which amended the cleanup goals and remedial alternatives first presented in the RI/FS.

Supplemental characterization information was obtained during Fall 2005 as part of the pre-remediation sampling efforts at the Site (USACE 2006a). Surface and subsurface sampling was performed in areas of the Site where the Conceptual Site Model (CSM) had not yet been adequately defined to support remedial design. The pre-remediation sampling event also included GWS and surface soil sampling in Class 2 SUs on a *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM) triangular grid to facilitate use of these data for final status survey purposes (EPA 2000a). The results of these efforts helped facilitate completion of a remediation volume estimate, the remedial design, and a majority of the Class 2 Final Status Survey (FSS).

In April 2006, the USACE issued a Record of Decision (ROD) identifying the remedial strategy for the radiologically contaminated soil (USACE 2006b). Excavation and off-site disposal were selected as the remedial strategy for the Site. Within the ROD, the USACE determined that the Nuclear Regulatory Commission (NRC) standards for decommissioning of licensed facilities found in 10 *Code of Federal Regulations* (*CFR*) 20.1402 and Ohio Administrative Code (OAC) 3701:1-38-22(B) are relevant and appropriate for cleanup of FUSRAP contaminated soils at the Site.

Between September 2007 and May 2008, during remedial activities, slightly more than 9,400 cubic yards of soil and debris were removed. This volume was well in excess of the estimated amount in the ROD so field investigations were undertaken to determine the extent of the remaining contamination. The results from the field investigation were evaluated against the clean-up guidance established in the ROD to estimate the volume of the material remaining to be excavated. Based on the results, data gaps were identified limiting the accuracy of the volume estimate to a level of confidence below what was needed for budgeting purposes. The field activities and data collected as outlined in this report will be utilized to fill these data gaps and reduce the volume uncertainty to an acceptable level.

2.3 Overview of Volume Uncertainty Reduction Sampling Activities

The purpose of this field effort was to provide information and data dealing with the nature and extent of residual radiological contamination that is greater than the proposed clean-up criteria delineated in the ROD (USACE 2006b). Rationale and protocols governing collection and analysis of samples were provided in the SAP, e.g., FSP and Quality Assurance Project Plan (QAPP) [ARSEC 2009b]. The logic presented in the FSP was developed by leveraging the historical pre- and post-remediation sampling and installing either 6-in. core borings or nominal 10-ft × 10-ft × 6-ft test pits at locations delineated in the USACE SOW.

This investigation focused on areas of the Site that required further definition to support future remedial action planning. The portions identified as requiring further definition include the lateral extent of the source term and the magnitude of the source term. The sampling design outlined in the FSP focused on obtaining data from areas that are immediately adjacent to previously remediated areas of the Site to address these issues and to provide data required to estimate the potential cost of future remedial actions. The ultimate goal of these activities is to aid the conceptual planning for additional remediation of the Site, allowing for a more precise delineation of excavation boundaries, depths, and volumes for disposal.

2.3.1 Data Collection

Data collection for Painesville included three types of information: (1) surface GWS on the surface of test pits; (2) surface and subsurface soil samples for offsite laboratory analysis by alpha spectroscopy, Lucas Cell, and TCLP methods; and (3) gross DHG measurements in sample holes opened after the installation of nominal 12-ft-deep soil cores using sonic drilling methods. The initial VURS layout is shown in Figure 2-2. The sampling and analysis techniques described in the FSP were used during the course of the field effort to refine the borehole and test pit sampling locations, where necessary, to account for subsurface and/or surface anomalies. The methods employed and subsequent results of these efforts are provided in Section 4 of this report.

2.3.2 Organization and Responsibilities

Under contract to USACE, ARSEC was responsible for implementation of work assignments related to VURS efforts at the Site. A detailed description of the project organization/responsibilities and organization chart is presented in the SAP (ARSEC 2009a). To summarize, the USACE-Buffalo District Project Manager was the prime interface with the Site property owners and the state of Ohio Environmental Protection Agency. The ARSEC team consisted of a Program/Project Manager, Site Manager, Site Radiation Safety Officer, Site Health and Safety Officer, Contractor Quality System Manager/Geologist, field health physics personnel, heavy equipment operator, and subcontract personnel. Site subcontract personnel consisted of a sonic drilling crew (Bowser-Morner, Inc.), a geophysical survey crew to locate the ACL (Civil and Environmental Consultants), and a state of Ohio-registered professional surveyor (McSteen & Associates, Inc.). Analytical services were provided by ARS (radiochemistry) and Assaigai Analytical (non-radiological analysis).

2.3.3 Data Quality Objectives

The Data Quality Objectives (DQOs) for the Painesville Pre-Remediation VURS effort were provided in the FSP and QAPP (2009a, 2009b) to reduce the volume uncertainty for radiologically contaminated soils requiring removal and disposal. DQOs outlined in the FSP and QAPP (EPA 2000b, 2000c) were met during activities executed during this project.

3.0 CIVIL SURVEYS

In addition to the installation of the soil borings and test pits and the collection of biased soil samples for offsite analysis, ARSEC's onsite activities included the following tasks:

- conduct civil surveys to delineate the planned and actual locations of the 32 soil borings and 16 test pits, and
- conduct a geophysical survey to determine the subsurface location of the ACL's routing beneath the parking lot to the west of the former Administration Building.

3.1 Civil Survey Information

McSteen & Associates of Wickliffe, Ohio, was subcontracted to provide professional surveying services to lay out the planned soil boring and test pit locations and to document the actual soil boring and test pit locations. During the Cabrera Services sampling and remediation work efforts conducted at the Site, McSteen & Associates provided similar types of support, including the installation/ establishment of benchmarks and control points throughout the Site. On Wednesday, May 13, 2009, Joe Charlson of McSteen & Associates mobilized to the Site with a Trimble® S6 DR 300+ 5844001 survey station. Using the Northing and Easting coordinates provided in the USACE-Buffalo SOW (USACE 2009), the proposed locations of the 32 soil borings and 16 test pits were surveyed and staked. All 48 survey points were marked with a unique number indicating what SU it was located nearby, whether it was a soil boring (SB) or test pit (TP), and a sequential number. All surveyed locations were installed using the North American Datum (NAD) 1983 Ohio North State Plane Coordinates and National Geodetic Vertical Datum (NGVD) 88 Datum, using English measurements. The proposed and actual locations for the soil borings and center of the test pits are provided in ***Table 3-1***. (Note: The actual location of the test pit is reported as the northeast corner.) A full-size AutoCAD drawing showing the proposed and actual locations of the soil borings and test pits is included in Appendix A.

Table 3-1 Proposed and Actual Location Coordinates for Soil Borings and Test Pits

	Northing[1]	Easting[1]		Northing[1]	Easting[1]
Soil Borings - Proposed Locations			Elevation	Actual Locations	
SU1SB001	763802.099	2313063.975	622.58	763802.099	2313063.975
SU1SB002	763759.17	2313067.038	622.91	763759.17	2313067.038
SU2SB001	763871.953	2313075.986	623.63	763870.168	2313060.324
SU2SB002	763853.334	2313073.314	622.42	763850.524	2313065.342
SU2SB003	763876.803	2313056.143	622.3	763891.621	2313065.378
SU13SB001	763634.342	2313155.601	623.28	763617.044	2313147.337
SU13SB002	763761.311	2313228.973	622.8	763761.311	2313228.973
SU13SB003	763888.358	2313155.606	623.69	763888.358	2313155.606
SU13SB004	764015.462	2313082.273	624.03	764015.462	2313082.273
SU17SB001	763434.776	2313008.469	623.49	763412.045	2313010.29
SU17SB002	763507.172	2312788.781	624.05	763507.172	2312788.781
SU17SB003	763507.197	2312935.552	623.54	763507.197	2312935.552
SU17SB004	763507.221	2313082.273	623.13	763507.221	2313082.273
SU17SB005	763507.162	2313228.995	622.88	763507.162	2313228.995
SU22SB001	764269.611	2312935.647	623.09	764265.306	2312940.597

Table 3-1 Proposed and Actual Location Coordinates for Soil Borings and Test Pits (continued)

	Northing[1]	Easting[1]		Northing[1]	Easting[1]
Soil Borings - Proposed Locations			**Elevation**	**Actual Locations**	
SU22SB002	764269.553	2313082.278	622.89	764263.815	2313084.006
SU22SB003	764396.683	2312715.459	619.87	764386.711	2312730.197
SU22SB004	764396.64	2312862.194	620.66	764391.712	2312861.917
SU22SB005	764396.654	2313008.884	621.76	764392.591	2313008.145
SU22SB006	764152.574	2313092.898	623.07	764152.574	2313092.898
SU22SB007	764164.249	2313016.546	622.5	764164.249	2313016.546
SU23SB001	763991.215	2312884.808	623.45	763991.215	2312884.808
SU23SB002	764041.163	2312893.313	623.83	764041.163	2312893.313
SU23SB003	764142.549	2312862.191	625.18	764142.549	2312862.191
SU23SB004	764264.704	2312789.66	620.93	764264.704	2312789.66
SU23SB005	763960.14	2312885.966	623.76	763960.14	2312885.966
SU23SB006	763942.625	2312882.28	623.83	763942.625	2312882.28
SU25SB001	763616.135	2312811.954	622.94	763616.135	2312811.954
SU25SB002	763648.015	2312866.972	622.94	763648.015	2312866.972
SU26SB001	763679.789	2312922.047	622.9	763679.789	2312922.047
SU26SB002	763636.661	2312954.775	622.96	763631.786	2312954.606
SU26SB003	763610.443	2312996.136	623.17	763610.443	2312996.136
SU14-TP001	764168.025	2313638.434	622.96	764176.017	2313656.18
SU14-TP002	764256.769	2313427.015	622.47	764261.775	2313432.051
SU14-TP003	764331.259	2313740.376	624.04	764336.258	2313745.364
SU15-TP001	763971.858	2313532.89	622.72	763978.861	2313537.866
SU15-TP002	763971.825	2313740.351	623.03	763976.861	2313745.364
SU15-TP003	763930.34	2313833.898	623.05	763939.355	2313837.948
SU16-TP001	764151.565	2313221.63	623.26	764156.56	2313214.618
SU16-TP002	764151.541	2313429.138	623.12	764154.946	2313324.42
SU18-TP001	763612.443	2313325.36	623.26	763620.265	2313334.345
SU18-TP002	763792.163	2313429.116	623.09	763784.184	2313452.44
SU19-TP001	763612.457	2313532.884	623.18	763617.464	2313537.866
SU19-TP002	763612.456	2313740.375	623	763615.664	2313743.347
SU19-TP003	763792.164	2313636.611	622.79	763797.162	2313643.615
SU20-TP001	763446.272	2313428.467	621.95	763451.256	2313433.474
SU20-TP002	763328.08	2313816.464	622.83	763333.053	2313821.488
SU21-TP001	764371.099	2313649.191	623.54	764376.087	2313654.141
Engineering Control Locations					
EC-1	763511.712	2313664.311	623.15		
EC-2	763501.964	2313639.332	623.09		
EC-3	763511.19	2313639.137	623.13		
EC-4	763502.655	2313664.513	623.11		

[1] The Northing and Easting values are in feet using the North American Datum of 1983 Ohio North State Plane Coordinates and National Geodetic Vertical Datum of 88.
[2] The Northing and Easting values for the actual test pits locations are reported using the northeast corner of the test pit.
SU = survey unit.
Note: See Section 9.1 for the reasons some boreholes and test pits were relocated.

3.2 Geophysical Location of Acid Conveyance Line

Civil and Environmental Consultants, Inc. (CEC) of Pittsburgh, Pennsylvania, was subcontracted to perform the necessary geophysical surveys to locate the subsurface location, including depth of the ACL beneath the parking lot on the west side of the former Administration Building. The CEC Team

mobilized to the Site on May 19, 2009. Based on historical data, CEC attempted to locate and mark the location of the ACL utilizing a GSSI 200-megahertz (MHz) GPR unit. This unit has a much lower frequency than typical utility-detecting GPR units and is used to locate piping up to 20 ft bgs.

CEC also mobilized the equipment and materials required to locate and mark the location of the ACL using a Frequency-Induction Survey (FIS). This is a semi-intrusive method and was a contingency method to be used only if the GPR was not able to positively locate and mark the ACL's location. The FIS method requires access to at least one end of the subsurface piping. FIS involves inserting a metallic tracer wire into the interior of the piping and inducing a traceable frequency onto the tracer wire to enable a positive response of the pipe location.

Upon applying the GPR method, CEC determined that the effective depth of the GPR was approximately 20 ft bgs. However, several anomalies were identified within the target area that impacted CEC's ability to identify the pipe location with certainty; therefore, the FIS method was utilized to verify the GPR findings.

Access to the northern end of the former ACL was gained via a manhole located within the grassy area due north of the parking lot and within the controlled area of the Site. Sections of PVC conduit with the metallic tracer wire attached were inserted into the manhole and fed into the former ACL. Approximately 160 ft of conduit and metallic tracer wire were inserted. A specific frequency was induced into the wire and the line was traced along the ground surface using the Radiodetection Cable Avoidance Tool (CAT).

The ACL was found to be oriented north–south ranging from an approximate depth of 10 ft bgs on the north to 13 ft bgs on the south. The location and approximate depths were marked on the ground surface using marking paint. The north and south end points of the ACL's line beneath the parking lot were quantified by McSteen & Associates using labeled survey stakes. A copy of CEC's Report of Findings ***(Figure 3-1)*** for the Geophysical Survey is provided in Appendix B.

Figure 3-1 Arial View Showing Location of Acid Conveyance Line

Standard Operating Procedure

The Radiodetection CAT and associated signal generator was used to locate the acid drain line at the site. The signal generator was attached to the tracer wire using an alligator clip. An audible response is heard when the equipment is connected to a tracer wire, to assure a good connection. The person performing the survey walks back and forth across the survey area carrying the handheld CAT. The CAT emits a pulsed audible tone when near the conductor (tracer wire in this instance). The audible tone gets louder as the surveyor crosses over the conductor. A visual signal strength indicator also increases and peaks as the surveyor crosses over the conductor. If the signal is too strong to pinpoint the location of the conductor, the gain of the receiver can be adjusted.

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures for this equipment include listening for the audible tones heard when connecting to a conductor and when detecting a conductor from the surface. Additional standard QA/QC included detecting the tracer wire in a known location (just beyond a manhole of known location and depth) and at the ground surface.

The CAT instrument was operating as designed for the duration of the survey.

4.0 CHARACTERIZATION ACTIVITIES

4.1 Soil Coring and Sampling

4.1.1 Soil Coring

A total of 32 locations were designated for soil coring. Soil corings were performed using sonic drilling methods conducted in accordance with American Society for Testing and Materials (ASTM) D6914 – 04E1, *Standard Practice for Sonic Drilling for Site Characterization and the Installation of Subsurface Monitoring Devices*. Locations were continuously cored with a 6-in.-diameter core barrel and an 8-in.-diameter outer drive casing (Schedule 30.0.280" mid-body, 0.375 wall, 4140 carbon steel threaded ends). Drill rig equipment was decontaminated between borehole locations to prevent cross-contamination.

Soil corings were advanced to a final depth of 12 to 14 ft bgs, with the soil cores being collected in two 6-ft lengths. The outer casing was held in place within the boring while the initial 6-ft core was removed. At the completion of each borehole, each hole was backfilled with #5 Global Sand, which was found to be an equivalent to #5 Morrie Sand specified in the USACE SOW.

Refusal was encountered prior to achieving the desired depth on several boreholes. A second boring attempt was made on all boreholes that met refusal. Notations denoting refusal or voids were documented on the field soil boring log sheets (Appendix C). The driller's boring logs can be found in Appendix D of this report and geological soil boring logs in Appendix E ***(Figure 4-1)***.

Figure 4-1 Soil Boring Rig and Soil Coring Operations

4.1.2 Surface Static Measurements

Surface static measurements were performed by suspending a gamma detector with a rope at a distance of approximately 2 to 3 in. above ground surface and performing a 1-minute count. Surface gamma static measurements were performed using a 3-in. by 3-in. NaI scintillation detector. Surface static measurements were performed on every soil coring location prior to digging. Results of borehole surface static gamma measurements can be found on the Borehole and Core Field Survey Forms in Appendix C of this report and are described in more detail in Section 10 of this report.

4.1.3 Downhole Gamma Logging

Downhole gamma count rates were collected by performing 1-minute static counts at each borehole location in 6-in. increments starting from the bottom and working upward. Downhole gamma measurements were acquired using a 3-in. by 3-in. NaI detector ***(Figure 4-2)***. DHG logging was performed on the entire depth of the boring. Ludlum Model 2221 rate meters/scalers coupled with Ludlum Model 44–20 NaI detectors were utilized. The DHG information was used to determine the depth interval from which samples should be collected and used for comparison against subsequent offsite analytical results in order to establish field correlation factors. Results of DHG measurements can be found on the Borehole and Core Field Survey Forms in Appendix C of this report and are described in more detail in Section 10 of this report.

Figure 4-2 Downhole Gamma Logging

4.1.4 Core Scans and Sampling

Soil cores were laid out on a working tray for field screening, visual description, gamma scans, and sampling. Core gamma scans were performed using Ludlum Model 2221 rate meters/scalers coupled with Ludlum Model 44–20 NaI detectors. Gamma scan measurements were recorded at 6-in. intervals along the length of the soil core. A minimum of three soil samples was collected from each soil core based on in-situ gamma scanning levels. The determining factor for sampling locations was the highest downhole gamma reading. Samples were collected from the 1-ft sampling interval with the highest DHG measurement and the 1-ft sampling intervals above and below the highest DHG measurement when the highest DHG measurement was not found at the lowest depth of the borehole. When the highest DHG measurement was found at the deepest 1-ft interval in the borehole, samples were collected from the two 1-ft sampling intervals above the deepest 1-ft interval and from the deepest 1-ft interval itself. Soil samples were sent offsite for analysis.

Core gamma scans and DGH measurements were performed at 6-in intervals in accordance with the FSP to better identify the location of the core with the highest gross gamma reading and to maintain consistency with previous site characterization efforts. Samples were collected from 1-ft intervals in

accordance with the FSP to ensure enough sample material for laboratory analysis and also to maintain consistency with previous site characterization efforts.

A total of 127 core samples were collected and analyzed for radiological parameters, of which 96 were field samples, 13 were duplicate samples, 9 were matrix spike/matrix spike duplicate (MS/MSD) samples, and 9 were USACE quality assurance (QA) split samples. Sample SU13SB003 was collected and utilized as both a field sample and MS/MSD sample. Field, field duplicate, and MS/MSD samples were sent to the ARS in Port Allen, Louisiana, for analysis. QA split samples were sent to Eberline Services in Oak Ridge, Tennessee, for analysis. All samples were analyzed for Ra-226, Th-230, Th-232, U-234, U-235, and U-238.

TCLP samples were collected from SU23-SB001, SU23-SB002, SU23-SB005, and SU23-SB006 and sent to the Assaigai laboratory in Albuquerque, New Mexico, for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs), and pesticides analysis. A field duplicate and MS/MSD sample were also collected and sent for analysis. A fifth TCLP sample was collected from SU2SB002 when an acrid chemical smell was noted in the soil core. (Please note that the field sample was incorrectly labeled SU1SB002 and notated on the COC as SU1, but the field log book indicates that the sample was collected from SU2.)

4.1.5 Geological Data for Soil Boring Cores

A total of 32 soil borings were advanced on the western portion of the Site between May 14–21, 2009. The cores were drilled using a Versa-Sonic rotary drill using rotary sonic technology. The 6-in.-diameter borings were advanced in 6-ft sections to a depth of 12 to 14 ft. The first two locations were advanced to approximately 12 ft. After soils were found to slough from the sides into the boreholes, subsequent borings were drilled to a total depth of approximately 14 ft to allow the downhole gamma logging to proceed to a 12-ft depth. Surface interference, such as concrete pads in several borings, prevented advancing the holes to the required depth. In this case, the rig was skidded several feet from the original staked location and the borings proceeded to depth.

The soil cores were described in accordance with ASTM-D2488-06, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).* Soil colors were identified using the Munsell Soil Color Charts (Year 2000 revised). Soil core descriptions for each boring and the geological field log book are found in Appendix E. In general, the soil core was dry to damp. Little perched water was recognized during coring.

Historically, the western portion of the Site was undeveloped with most of the permanent buildings located on the eastern side of the facility. The western portion is essentially flat with elevation changes of less than 2 to 3 ft. On the northern and southern perimeters of the Site, a dark-greenish to gray clay was encountered at the 9- to 12-ft depth (see SU22 and SU17 borings). The clay is generally described as hard with medium to high plasticity. In the center portion of the Site, this clay was commonly encountered closer to 12 ft bgs.

The dark greenish-gray clay is overlain by an undistinguished clay described as yellowish to olive brown, silty, firm to hard consistency, and medium to high plasticity. The appearance of identifiable fill interspersed with this clay suggests that the clay may itself be fill material. This is supported by

the frequent presence of angular gravel at depth. Fill especially can be recognized in the center portion of the Site (see SU13SB001, SU2SB001, SU23SB002, and SU23SB004).

4.2 Test Pit Excavation and Sampling

4.2.1 Test Pit Excavation

Test pits were excavated at selected locations in the eastern portion of the Site to verify that contamination was not present at depth in Class 2 areas.

A total of 16 test pits were excavated using a backhoe to a depth of 6 ft bgs ***(Figure 4-3)***. Test pits were excavated in accordance with Occupational Safety and Health Act of 1970 (OSHA) requirements 29 *CFR* 1926.650 through 29 *CFR* 1926.653 in order to maintain stable sidewalls

Figure 4-3 Test Pit Excavation and an Excavated Test Pit

for personnel entry and to allow for the performance of radiological scans, recording of visual observations, and collection of soil samples.

A GWS was performed on the ground surface within surveyed boundaries of the test pits prior to excavation. Surface dimensions of the test pits were approximately 10 ft by 10 ft. Individual test pits were excavated in two separate steps. Step 1 involved the excavation of soil to a depth less than or equal to 4 ft bgs, with subsequent gamma scans of the test pit walls. Step 2 involved the additional excavation of the test pit to a depth of 6 ft bgs, the benching of the test pit at approximately 2 ft bgs level to allow for the safe entry of technicians, and subsequent gamma scans of the test pit walls and bottom.

Soils were stockpiled adjacent to the test pit at least 2 ft from the excavation edge on plastic sheeting and were laid out in the order of removal. A gamma scan of stockpiled soils was performed prior to placement of the soils back into the excavated test pit. Results of the gamma scan were reported to the Contracting Officer's Representative (COR).

Test Pit SU19-TP004 was not fully excavated at the direction of the COR. Test Pit SU19-TP004 was located on a stone-filled concrete sump ***(Figure 4-4)***. Test Pit SU19-TP004 was relocated to SU15 at the direction of the COR and was designated Test Pit SU15-TP003. Coordinates for SU15-TP003 are contained in Table 3-1 of this report.

Test Pit SU16-TP002 was not fully excavated at the direction of the COR. Test Pit SU16-TP002 was originally located on a concrete slab buried approximately 6 in. bgs. Test Pit SU16-TP002 was relocated approximately 100 ft west at the direction of the COR. Final coordinates for SU16-TP002 are contained in Table 3-1 of this report.

An abandoned stormwater drain pipe was severed while excavating Test Pit SU19-TP001. Approximately 275 gallons of water flowed into the test pit. The water was pumped from the test pit using a 2-in. "trash pump," filtered through a 5-micron filter, and placed into a 500-gallon holding tank. The holding tank was later discharged at the direction of the COR.

Figure 4-4 Original Location of SU19-TP004 Showing Buried Sump

A licensed land surveyor from McSteen & Associates was used to determine the original location of the test pits in accordance with the FSP. The locations of the four corners and center of the test pits were marked and staked. The original locations of the test pit stakes are referred to in this report as "as staked" locations. Test pits were subsequently excavated and surveyed. The actual location and final footprint of the excavated test pits varied slightly from originally staked areas due to buried obstacles (e.g., concrete walls, concrete pads, storm drain lines, etc.) and limitations of backhoe excavating techniques. The test pits were backfilled upon completion of radiological surveying and sampling evolutions. A technician placed stakes at the four corners of the backfilled test pit. The licensed land surveyor resurveyed the exact location of the four corners of the excavated test pits. The final locations of the four corners of the test pits are referred to in this report as "as installed" locations. Coordinates for test pit "as staked" and "as installed" locations are contained in Section 3.1 of this report.

4.2.2 Test Pit Surface Static Gamma Measurements and Gamma Walkover Surveys

A surface GWS was performed at each test pit location prior to excavation using a 3-in. by 3-in. NaI detector. A 1-minute static gamma count was performed on the ground surface of the test pit in the area indicating the highest gross gamma reading.

Results of test pit surface static gamma measurements and GWSs are described further in Section 10 of this report and are recorded on the Test Pit Field Survey Forms in Appendix F. Also in Appendix F are the Test Pit Log Books.

4.2.3 Test Pit Gamma Measurements

Test pit sidewalls and bottoms were scanned for gross gamma levels using a 3-in. by 3-in. collimated NaI detector ***(Figure 4-5)***. Sidewall and bottom gross gamma scans were performed in 6-in. increments (vertically and horizontally) starting from the top of each test pit and proceeding to the bottom.

Figure 4-5 Test Pit Wall Gamma Surveys

The highest, lowest, and average gross gamma measurements for the test pit walls and bottom were recorded in 6-in. depth increments on Field Survey Forms.

Test pit sidewall and bottom gross gamma measurements are described further in Section 10 of this report and are recorded on the Test Pit Field Survey Forms in Appendix F.

4.2.4 Test Pit Sampling

A soil sample was collected from the 0.0- to 0.5-ft depth interval of each test pit from the area indicating the highest gross gamma reading prior to excavation. Two sidewall samples and one bottom sample were collected from locations within the test pit exhibiting the highest gross gamma scan measurements. No visible evidence of potential contamination due to changes in soil conditions (i.e., discoloration) was noted in the 16 excavated test pits.

Samples were collected using a stainless steel scoop and represented a 6-in. vertical interval at each selected sampling location. Each sample had a mass of approximately 1 kilogram (kg). Samples were homogenized in a stainless steel bowl prior to containerization. Visually identifiable non-soil components such as stones, twigs, and foreign objects were manually separated in the field and excluded from the samples to avoid biasing results low.

Samples were not preserved in the field, as there are no preservation requirements for the radiological analyses. The sampling scoop and homogenizing bowl were decontaminated between samples to avoid cross-contamination.

Soil samples were placed in high-density polyethylene (HDPE) containers. The containers were labeled in accordance with Section 5.4.2 of the FSP. Samples were packaged and shipped to the ARS laboratory in Port Allen, Louisiana, in accordance with Section 5.7 of the FSP.

The surface sample for SU18-TP002 was not collected. By the time this omission was discovered, the pit had been excavated and the sample site was no longer available. However, surface static gamma readings taken at SU18-TP002 indicated no elevated readings greater than background levels for the area.

Table 4-1 indicates the number of test pit field samples taken in each SU.

Table 4-1 Number of Test Pit Field Samples

Survey Unit	Number of Test Pits	Field Samples
SU14	3	12
SU15	3	12
SU16	2	8
SU18	2	7
SU19	3	12
SU20	2	8
SU21	1	4

4.2.5 Geological Data for Test Pits

The 16 test pits were advanced on the eastern portion of the Site between May 15–20, 2009. Surface interference such as concrete pads in several test pit locations prevented the advancement of the pits at the staked location. In cases where this occurred, the pits were located a few feet from the original location.

The test pit walls were described in accordance with ASTM-D2488-06, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. This method was not applied to the numerous fill horizons encountered (see Appendix G: SU14TP002, SU16TP001, SU19TP002 for examples). Soil colors were identified using the Munsell Soil Color Charts (Year 2000 revised). Test pit soil descriptions for each boring are found in Appendix G.

Historically, the eastern portion of the Site was more developed than the western side with most of the permanent buildings located on the eastern side of the facility. During test pit excavations, identifiable fill was frequently encountered. The fill included buried concrete pads, rebar, gravel and brick fill, and buried root mat horizons. Greenish-gray clay, which may represent native clay, was common at depth on the western portion of the Site. Greenish-gray clay was rarely encountered on the eastern side of the Site due to the more shallow depth of the pits and more disturbed nature of the soil.

5.0 RADIOLOGICAL CONTROLS

5.1 Air Sampling

Air monitoring was performed during site test pit excavation activities in accordance with the FSP and Health, Safety, and Radiation Protection Plan (HSRPP) [ARSEC 2009c]. Air monitoring was performed to ensure exposure to workers, the public, and the environment from radioactivity and/or hazardous substances (VOCs, carbon monoxide [CO]) was maintained as low as reasonably achievable (ALARA). Air monitoring was divided into two categories—radiological and non-radiological.

5.1.1 Radiological Air Monitoring

Area and breathing zone (BZ) radiological air monitoring was performed during test pit excavation activities. Radiological air monitoring was not performed at soil boring sites, as the method of drilling the soil borings did not produce fugitive dust.

Area sampling was performed at the upwind site boundary, the downwind site boundary, and at the downwind side of areas immediately adjacent to test pit excavation activities. Calibrated, low-volume F&J Model LV-1 air samplers were used to collect area air samples. Air samples were collected on a 47-millimeter (mm) glass-fiber filter paper. Air samples were collected continuously throughout the duration of the excavation activity.

BZ air sampling was performed in excavated areas to measure the potential airborne radioactivity exposure to workers. BZ air samples were collected using a calibrated personal air sampler (PAS). The PAS was worn by at least one individual within each excavated area. BZ air samples were collected on 25-mm glass-fiber filter papers. The BZ sample was collected continuously while the person was in the excavated area.

Upon completion of the sampling event, air filters were removed from the sample head and placed in a sample envelope for onsite screening. The location, start time, stop time, and flow rate of the air sampler were noted on the sample envelope. Air filters were screened onsite for gross alpha-beta activity using a Ludlum Model 3030 dual-scintillation sample counter. Air samples were then sent to the ARS laboratory for gross alpha-beta counting using a low background gas flow proportional counter. Results of onsite and laboratory air sample analyses are contained in Appendix H of this report.

5.1.2 Non-Radiological Air Monitoring

Two types of non-radiological air monitoring were performed during site activities—particulate dust monitoring and organic vapor monitoring.

Particulate dust monitoring was performed in work areas to measure levels of dust as a result of test pit excavation activities. Dust monitoring was performed using a TSI Dustrak monitor. The dust monitor produced real-time aerosol readings and computed time-weighted averages. Particulate dust greater than ambient levels was not found during excavation activities. Particulate air monitoring was not performed at soil boring sites, as the method of drilling the soil borings did not produce fugitive dust.

Organic vapor monitoring was performed during excavation activities using a MulitRAE Plus photoionization detector (PID) to monitor for VOCs and hazardous gases. Periodic readings were taken at least once during the morning and once in the afternoon each during excavation activities. No organic vapors or hazardous gases were found during excavation activities except as noted below.

A strong chemical odor was encountered while examining the core from borehole SU2-SB002 at the 1.5- to 9.5-ft bgs depth interval. PID readings encountered in the borehole are as follows: 3.6 ft – 11.85 parts per million (ppm), 5.0 ft 80 ppm, and 7.0 ft – 101 ppm. Organic vapors greater than ambient were detected at this location and depth interval. A petroleum odor was also encountered emanating from a stained area of the east wall of test pit SU15-TP003 at the 1.5- to 2.5-ft bgs depth interval. Staining and petroleum odors were not encountered on the north, south, or west test pit walls. Test pit SU15-TP003 is located at the common fenceline next to Hardy Industrial Technologies to the east.

5.2 Radiological Surveys

Radiological contamination surveys were performed to ensure that contamination exceeding the free release criteria stated in the HSRPP (ARSEC 2009c) was not released offsite. The drill rig, backhoe, and Bobcat that were used onsite were decontaminated with water prior to free release surveys. Decontamination was performed on a decon pad and all rinse water was contained, collected, placed in 55-gallon drums, and stored onsite as investigation-derived waste (IDW). Conex boxes used on the Site were surveyed for fixed and removable contamination in accordance with the HSRPP prior to release from the Site. No Conex box contamination greater than the free release criteria was found. All contractor and rental equipment was surveyed for fixed and removable contamination in accordance with the HSRPP prior to release from the Site. No contamination greater than the free release criteria was found on personnel, equipment, or vehicles leaving the Site. ***Table 5-1*** summarizes the free release surveys for the Conex boxes and drums. Release survey forms for the IDW containers and vehicle survey forms are located in Appendix H.

Table 5-1 Waste Container Free Release Survey Data Results

Container Identification	Dose Rate (µR/hr)	Removable Alpha (DPM)	Removable Beta (DPM)
LSA Box No. 1	8	< 20.93	< 47.72
LSA Box No. 2	9	< 20.93	< 47.72
LSA Box No. 3	9	< 20.93	< 47.72
Drum No. 1	6	< 20.93	< 47.72
Drum No. 2	7	< 20.93	< 47.72
Drum No. 3	7	< 20.93	< 47.72
Drum No. 4	7	< 20.93	< 47.72
Drum No. 5	8	< 20.93	< 47.72
Drum No. 6	7	< 20.93	< 47.72
Drum No. 7	6	< 20.93	< 47.72
Drum No. 8	7	< 20.93	< 47.72
Drum No. 9	7	< 20.93	< 47.72
Drum No. 10	8	< 20.93	< 47.72
Drum No. 11	7	< 20.93	< 47.72

µR/hr = microRoentgen per hour.
DPM = disintegrations per minute.
LSA = Low specific activity

6.0 INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DESCRIPTION AND SOIL BORING TCLP ANALYTICAL DATA

IDW was generated as a result of the field activities for this project. IDW consisted of low-level radioactive media in the form of dry active waste (DAW) and water generated from decontamination activities. DAW consisted of used plastic sheeting on which excavated soils were placed, borehole cores, and used personal protective equipment (PPE). Borehole cores were labeled and placed into two 96-ft^3 B-25 low-specific-activity (LSA) containers. Plastic sheeting and used PPE were placed in a separate 96-ft^3 B-25 LSA container. Water generated from decontamination activities was filtered through a 5-micron filter and collected in 25 drums (55-gallon). The B-25 containers and 55-gallon drums were stored in an area of the Site adjacent to the pole barn. The area was isolated with ropes and signage in accordance with the HSRPP. Waste materials within these containers will be incorporated into the remediation waste streams generated during the next phase of the project.

TCLP samples of IDW were collected and sent to the Assaigai laboratory in Albuquerque, New Mexico, for VOCs, SVOCs, TAL metals, PCBs, and pesticides analysis. Results of IDW sample analyses are found in Appendix I of this report.

Table 6-1 presents the TCLP analytical results for the B-25 boxes and drummed decontamination water. ***Table 6-2*** contains the TCLP analytical results from the four requested soil borings and from the additional soil boring sample, PNV-SO-SU2SB002-7, collected as a result of a noticeable chemical odor. Included in Tables 6-1 and 6-2 are the associated regulatory disposal standards from 40 *CFR* 268.48, Non-wastewater Standard Land Disposal Restrictions, Subpart D, Universal Treatment Standards.

Table 6-1 Positive Detections from IDW TCLP Sample Results

Sample Number	Analysis/ Chemical Class	Analyte	Result	Units	Detection Limit	Qualifier	Regulatory Limit[1]
PNV-SO-IDW GREY *	VOC	Chloroform	0.0002	mg/L	0.0002	J	6.0 mg/kg
PNV-SO-IDW GREY	VOC	Methyl ethyl ketone	0.005	mg/L	0.0025	J	36 mg/kg
PNV-SO-IDW GREY	SVOC	1-Methylnaphthalene	3.2	mg/kg	0.12		No std
PNV-SO-IDW GREY	SVOC	2-Methylnaphthalene	1.9	mg/kg	0.11		No std
PNV-SO-IDW GREY	SVOC	Acenaphthene	0.71	mg/kg	0.12		3.4
PNV-SO-IDW GREY	SVOC	Anthracene	0.36	mg/kg	0.12		3.4
PNV-SO-IDW GREY	SVOC	Benzo(g,h,i)perylene	0.14	mg/kg	0.12	J	1.8
PNV-SO-IDW GREY	SVOC	bis(2-Ethylhexyl)phthalate	4.7	mg/kg	0.072		28
PNV-SO-IDW GREY	SVOC	Dibenzofuran	0.34	mg/kg	0.048	J	No std
PNV-SO-IDW GREY	SVOC	di-n-Butylphthalate	0.28	mg/kg	0.036	J	28

Table 6-1 Positive Detections from IDW TCLP Sample Results (continued)

Sample Number	Analysis/ Chemical Class	Analyte	Result	Units	Detection Limit	Qualifier	Regulatory Limit[1]
PNV-SO-IDW GREY	SVOC	Fluoranthene	0.24	mg/kg	0.084		3.4
PNV-SO-IDW GREY	SVOC	Naphthalene	0.48	mg/kg	0.096		5.6
PNV-SO-IDW GREY	SVOC	Pentachlorophenol	1.2	mg/kg	0.11		4.8
PNV-SO-IDW GREY	SVOC	Pyrene	0.46	mg/kg	0.084		8.2
PNV-SO-IDW GREY	Metals	Arsenic	7.2	mg/kg	0.946		5
PNV-SO-IDW GREY	Metals	Barium	7.52	mg/kg	0.077		21
PNV-SO-IDW GREY	Metals	Chromium	3.3	mg/kg	0.124		0.6
PNV-SO-IDW GREY	Metals	Lead	9.69	mg/kg	0.873		0.75
PNV-L-Decon Pad **	VOC	Methyl ethyl ketone	0.0093	mg/L	0.0025		36
PNV-L-Decon Pad	Metals	Barium	0.221	mg/L	0.0008		21

* No pesticides/polychlorinated biphenyls (PCBs) detected.
** No SVOCs, pesticides/PCBs detected.
[1] 40 *Code of Federal Regulations* 268.48, Non-wastewater Standard Land Disposal Restrictions, Subpart D, Universal Treatment Standards.
IDW = Investigation-Derived Waste.
mg/kg = milligrams per kilogram.
mg/L = milligrams per liter.
std = Standard.
SVOC = Semivolatile Organic Compound.
TCLP = Toxicity Characteristic Leaching Procedure.
VOC = Volatile Organic Compound.

Table 6-2 Positive Detections from Soil Boring TCLP Sample Results

TCLP results	Analysis/ Chemical Class	Analyte	Result	Units	Detection Limit	Qualifier	Regulatory Limit[1] (mg/L, mg/kg)
PNV-SO-SU23SB001 *	VOC	Methyl ethyl ketone	0.0054	mg/L	0.0025	JB	36
PNV-SO-SU23SB001	Metals	Arsenic	0.025	mg/L	0.009		36
PNV-SO-SU23SB001	Metals	Barium	0.369	mg/L	0.0008		21
PNV-SO-SU23SB001	Metals	Chromium	0.0226	mg/L	0.0012		0.6
PNV-SO-SU23SB002 *	VOC	Methyl ethyl ketone	0.0028	mg/L	0.0025		36
PNV-SO-SU23SB002	Metals	Arsenic	0.032	mg/L	0.009		50
PNV-SO-SU23SB002	Metals	Barium	0.669	mg/L	0.0011		21
PNV-SO-SU23SB002	Metals	Chromium	0.0128	mg/L	0.0012		0.6
PNV-SO-SU23SB005 **	Metals	Barium	0.447	mg/L	0.009		21

Table 6-2 Positive Detections from Soil Boring TCLP Sample Results (continued)

TCLP results	Analysis/ Chemical Class	Analyte	Result	Units	Detection Limit	Qualifier	Regulatory Limit[1] (mg/L, mg/kg)
PNV-SO-SU23SB005 dup *	VOC	Methyl ethyl ketone	0.032	mg/L	0.0025		36
PNV-SO-SU23SB005 dup	Metals	Barium	0.652	mg/L	0.0008		21
PNV-SO-SU23SB006	VOC	Methyl ethyl ketone	0.0042	mg/L	0.0025	JB	36
PNV-SO-SU23SB006	Metals	Barium	0.43	mg/L	0.0008		21
PNV-SO-SU2SB002-7 *, 2	VOC	Benzene	0.0002	mg/L	0.0002	J	10
PNV-SO-SU2SB002-7	VOC	Methyl ethyl ketone	0.0037	mg/L	0.0025	JB	36
PNV-SO-SU2SB002-7	Metals	Barium	0.929	mg/L	0.0008		21

* Sample had no detects for semivolatile organic compounds (SVOCs), pesticides, or polychlorinated biphenyls (PCBs).
** Sample had no detects for VOCs, SVOCs, pesticides, or PCBs.
[1] 40 *Code of Federal Regulations* 268.48, Non-wastewater Standard Land Disposal Restrictions, Subpart D, Universal Treatment Standards.
[2] Sample PNV-SO-SU2SB002-7 is not IDW. This sample was collected because chemical odor was noted at 7 ft below ground surface.
J = Estimate.
JB = Estimate; analyte found in associated blank.
mg/kg = milligrams per kilogram.
mg/L = milligrams per Liter.
TCLP = Toxicity Characteristic Leaching Procedure.
VOC = Volatile Organic Compound.

7.0 LABORATORY ANALYSIS

7.1 Radiochemical Analysis

Radioanalytical samples were sent to ARS, Port Allen, Louisiana. Requested analyses included Ra-226 by U.S. Environmental Protection Agency (EPA) Method 903.1 – *Radium-226 in Drinking Water*, and thorium and uranium by DOE Environmental Measurements Laboratory Method HASL-300.

EPA Method 903.1 is not designed to be run on soil. It is a method designed by EPA for analysis of Ra-226 in drinking water. Modifications to the method included the following:

- barium-133 tracer used to determine % recovery,
- drying and homogenization of samples, and
- microwave sample digestion using nitric and hydrochloric acids.

In addition, EPA Method 903.1 requires that Radon-222 ingrowth be performed for a period of 4 to 8 days. The rapid turnaround time required for this project prevented the adequate ingrowth period. Samples were ingrown for 2 days, allowing for approximately 25% of the ingrowth. An ingrowth factor was used to correct for the Radon-222 ingrowth.

The samples contained significant amounts of iron and phosphates that cause severe interference with thorium results. The isotopic procedure was altered to include a cerium nitrate precipitation prior to running the sample through the TEVA® ion exchange column. This precipitation removed a high percentage of the iron and phosphates and resulted in acceptable thorium recoveries.

Tables 7-1 and ***7-2*** present tracer recovery data for soil boring samples and test pit samples, respectively. ARS experienced a problem with one of the alpha spectrometers prior to processing all of the thorium isotopic samples. As a result, 100 samples were shipped to the Test America Laboratory in Earth City, Missouri, to complete the thorium analyses.

The tracer recovery for several samples fell below the ARS acceptance criteria. The activity calculation takes the tracer recovery into consideration. Therefore, based on the other QC for the samples (i.e., LCS, LCSD, Sample Duplicate, Field Duplicate) and analysis rerun results, the data is being reported as valid.

7.2 Radiochemical QA Split Samples

Per client request, 16 QA split samples were collected and shipped to Eberline Analytical Laboratory in Oak Ridge, Tennessee.

7.3 Chemical Analyses

Samples for chemical analyses were sent to Assaigai laboratory (ARS Analytical) in Albuquerque, New Mexico. Chemical analyses included TCLP volatile organic analytes (VOAs), TCLP semivolatile organic analytes (SVOAs), TCLP pesticides, TCLP PCBs, and TCLP metals. See Tables 6-1 and 6-2 for chemical analysis results.

Table 7-1 Tracer Recovery Data for Soil Boring Samples

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU1-SB001(6.0-7.0)	100%	77%	77%	74%	74%	74%
PNV-SO-SU1-SB001(7.0-8.0)	100%	83%	83%	70%	70%	70%
PNV-SO-SU1-SB001(7.0-8.0) dup	100%	77%	77%	45%	45%	45%
PNV-SO-SU1-SB001(8.0-9.0)	100%	71%	71%	64%	64%	64%
PNV-SO-SU1-SB002(6.0-7.0)	61%	63%	63%	50%	50%	50%
PNV-SO-SU1-SB002(7.0-8.0)	100%	64%	64%	63%	63%	63%
PNV-SO-SU1-SB002(8.0-9.0)	100%	75%	75%	52%	52%	52%
PNV-SO-SU2-SB001(9.0-10.0)	100%	84%	84%	43%	43%	43%
PNV-SO-SU2-SB001(10.0-11.0)	100%	59%	59%	32%	32%	32%
PNV-SO-SU2-SB001(11.0-12.0)	75%	76%	76%	52%	52%	52%
PNV-SO-SU2-SB001(11.0-12.0) dup	100%	86%	86%	60%	60%	60%
PNV-SO-SU2-SB002(9.0-10.0)	68%	77%	77%	47%	47%	47%
PNV-SO-SU2-SB002(10.0-11.0)	93%	83%	83%	46%	46%	46%
PNV-SO-SU2-SB002(11.0-12.0)	51%	76%	76%	37%	37%	37%
PNV-SO-SU2-SB003(6.0-7.0)	76%	77%	77%	62%	62%	62%
PNV-SO-SU2-SB003(7.0-8.0)	85%	77%	77%	62%	62%	62%
PNV-SO-SU2-SB003(8.0-9.0)	100%	77%	77%	81%	81%	81%
PNV-SO-SU13-SB001(8.0-9.0)	89%	76%	76%	61%	61%	61%
PNV-SO-SU13-SB001(9.0-10.0)	89%	26%	26%	71%	71%	71%
PNV-SO-SU13-SB001(10.0-11.0)	73%	11%	11%	63%	63%	63%
PNV-SO-SU13-SB002(6.0-7.0)	78%	69%	69%	78%	78%	78%
PNV-SO-SU13-SB002(7.0-8.0)	100%	70%	70%	68%	68%	68%
PNV-SO-SU13-SB002(8.0-9.0)	67%	44%	44%	63%	63%	63%
PNV-SO-SU13-SB003(7.0-8.0)	100%	36%	36%	55%	55%	55%
PNV-SO-SU13-SB003(8.0-9.0)	41%	36%	36%	53%	53%	53%
PNV-SO-SU13-SB003(8.0-9.0) dup	75%	40%	40%	44%	44%	44%
PNV-SO-SU13-SB003(9.0-10.0)	100%	84%	84%	83%	83%	83%
PNV-SO-SU13-SB004(7.0-8.0)	100%	63%	63%	48%	48%	48%
PNV-SO-SU13-SB004(8.0-9.0)	100%	74%	74%	1%	1%	1%
PNV-SO-SU13-SB004(8.0-9.0) dup	59%	83%	83%	69%	69%	69%
PNV-SO-SU13-SB004(9.0-10.0)	63%	94%	94%	70%	70%	70%

Table 7-1 Tracer Recovery Data for Soil Boring Samples (continued)

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU17-SB001(9.0-10.0)	100%	84%	84%	77%	77%	77%
PNV-SO-SU17-SB001(10.0-11.0)	82%	71%	71%	76%	76%	76%
PNV-SO-SU17-SB001(11.0-12.0)	72%	76%	76%	75%	75%	75%
PNV-SO-SU17-SB001(11.0-12.0) dup	72%	74%	74%	64%	64%	64%
PNV-SO-SU17-SB002(9.0-10.0)	100%	78%	78%	79%	79%	79%
PNV-SO-SU17-SB002(10.0-11.0)	100%	73%	73%	49%	49%	49%
PNV-SO-SU17-SB002(11.0-12.0)	100%	62%	62%	78%	78%	78%
PNV-SO-SU17-SB003(7.0-8.0)	75%	68%	68%	59%	59%	59%
PNV-SO-SU17-SB003(8.0-9.0)	100%	40%	40%	71%	71%	71%
PNV-SO-SU17-SB003(9.0-10.0)	92%	59%	59%	70%	70%	70%
PNV-SO-SU17-SB004(7.0-8.0)	100%	82%	82%	82%	82%	82%
PNV-SO-SU17-SB004(7.0-8.0) dup	100%	66%	66%	69%	69%	69%
PNV-SO-SU17-SB004(8.0-9.0)	98%	72%	72%	38%	38%	38%
PNV-SO-SU17-SB004(9.0-10.0)	90%	76%	76%	68%	68%	68%
PNV-SO-SU17-SB005(4.0-5.0)	100%	35%	35%	54%	54%	54%
PNV-SO-SU17-SB005(5.0-6.0)	100%	67%	67%	66%	66%	66%
PNV-SO-SU17-SB005(6.0-7.0)	60%	71%	71%	73%	73%	73%
PNV-SO-SU22-SB001(3.0-4.0)	44%	46%	46%	51%	51%	51%
PNV-SO-SU22-SB001(4.0-5.0)	100%	69%	69%	54%	54%	54%
PNV-SO-SU22-SB001(5.0-6.0)	94%	70%	70%	53%	53%	53%
PNV-SO-SU22-SB002(4.0-5.0)	100%	51%	51%	52%	52%	52%
PNV-SO-SU22-SB002(5.0-6.0)	73%	69%	69%	54%	54%	54%
PNV-SO-SU22-SB002(5.0-6.0) dup	99%	69%	69%	52%	52%	52%
PNV-SO-SU22-SB002(6.0-7.0)	100%	71%	71%	36%	36%	36%
PNV-SO-SU22-SB002(6.0-7.0) dup	90%	48%	48%	60%	60%	60%
PNV-SO-SU22-SB003(3.0-4.0)	37%	62%	62%	71%	71%	71%
PNV-SO-SU22-SB003(4.0-5.0)	100%	54%	54%	64%	64%	64%
PNV-SO-SU22-SB003(5.0-6.0)	100%	59%	59%	69%	69%	69%
PNV-SO-SU22-SB004(4.0-5.0)	100%	54%	54%	72%	72%	72%
PNV-SO-SU22-SB004(5.0-6.0)	54%	68%	68%	77%	77%	77%
PNV-SO-SU22-SB004(6.0-7.0)	69%	47%	47%	73%	73%	73%
PNV-SO-SU22-SB005(3.0-4.0)	100%	63%	63%	45%	45%	45%

Table 7-1 Tracer Recovery Data for Soil Boring Samples (continued)

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU22-SB005(4.0-5.0)	100%	57%	57%	59%	59%	59%
PNV-SO-SU22-SB005(5.0-6.0)	90%	63%	63%	75%	75%	75%
PNV-SO-SU22-SB006(7.0-8.0)	86%	3%	3%	63%	63%	63%
PNV-SO-SU22-SB006(7.0-8.0) dup	90%	39%	39%	56%	56%	56%
PNV-SO-SU22-SB006(8.0-9.0)	100%	66%	66%	68%	68%	68%
PNV-SO-SU22-SB006(9.0-10.0)	100%	72%	72%	58%	58%	58%
PNV-SO-SU22-SB007(7.0-8.0)	82%	1%	1%	69%	69%	69%
PNV-SO-SU22-SB007(8.0-9.0)	100%	1%	1%	74%	74%	74%
PNV-SO-SU22-SB007(9.0-10.0)	100%	1%	1%	64%	64%	64%
PNV-SO-SU23-SB001(2.0-3.0)	100%	82%	82%	51%	51%	51%
PNV-SO-SU23-SB001(3.0-4.0)	100%	82%	82%	49%	49%	49%
PNV-SO-SU23-SB001(4.0-5.0)	100%	79%	79%	40%	40%	40%
PNV-SO-SU23-SB002(0.5-1.5)	100%	81%	81%	41%	41%	41%
PNV-SO-SU23-SB002(0.5-1.5) dup	100%	56%	56%	53%	53%	53%
PNV-SO-SU23-SB002(1.5-2.5)	97%	88%	88%	48%	48%	48%
PNV-SO-SU23-SB002(2.5-3.5)	69%	77%	77%	34%	34%	34%
PNV-SO-SU23-SB003(2.0-3.0)	100%	80%	80%	48%	48%	48%
PNV-SO-SU23-SB003(3.0-4.0)	100%	63%	63%	26%	26%	26%
PNV-SO-SU23-SB003(4.0-5.0)	100%	77%	77%	60%	60%	60%
PNV-SO-SU23-SB004(6.0-7.0)	100%	41%	41%	57%	57%	57%
PNV-SO-SU23-SB004(7.0-8.0)	100%	46%	46%	66%	66%	66%
PNV-SO-SU23-SB004(8.0-9.0)	100%	70%	70%	74%	74%	74%
PNV-SO-SU23-SB005(5.0-6.0)	100%	74%	74%	63%	63%	63%
PNV-SO-SU23-SB005(6.0-7.0)	95%	12%	12%	74%	74%	74%
PNV-SO-SU23-SB005(6.0-7.0) dup	63%	26%	26%	66%	66%	66%
PNV-SO-SU23-SB005(7.0-8.0)	95%	19%	19%	71%	71%	71%
PNV-SO-SU23-SB006(9.0-10.0)	100%	14%	14%	47%	47%	47%
PNV-SO-SU23-SB006(10.0-11.0)	93%	61%	61%	64%	64%	64%
PNV-SO-SU23-SB006(11.0-12.0)	56%	26%	26%	60%	60%	60%
PNV-SO-SU25-SB001(5.0-6.0)	100%	83%	83%	67%	67%	67%
PNV-SO-SU25-SB001(6.0-7.0)	100%	82%	82%	64%	64%	64%
PNV-SO-SU25-SB001(7.0-8.0)	60%	86%	86%	79%	79%	79%

Table 7-1 Tracer Recovery Data for Soil Boring Samples (continued)

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU25-SB002(6.0-7.0)	77%	80%	80%	75%	75%	75%
PNV-SO-SU25-SB002(7.0-8.0)	100%	93%	93%	71%	71%	71%
PNV-SO-SU25-SB002(8.0-9.0)	100%	77%	77%	40%	40%	40%
PNV-SO-SU25-SB002(8.0-9.0) dup	53%	85%	85%	71%	71%	71%
PNV-SO-SU26-SB001(3.0-4.0)	81%	91%	91%	75%	75%	75%
PNV-SO-SU26-SB001(4.0-5.0)	100%	85%	85%	81%	81%	81%
PNV-SO-SU26-SB001(5.0-6.0)	82%	92%	92%	78%	78%	78%
PNV-SO-SU26-SB002(7.0-8.0)	97%	77%	77%	54%	54%	54%
PNV-SO-SU26-SB002(8.0-9.0)	90%	79%	79%	54%	54%	54%
PNV-SO-SU26-SB002(8.0-9.0) dup	100%	73%	73%	39%	39%	39%
PNV-SO-SU26-SB002(9.0-10.0)	100%	73%	73%	52%	52%	52%
PNV-SO-SU26-SB003(7.0-8.0)	68%	76%	76%	80%	80%	80%
PNV-SO-SU26-SB003(8.0-9.0)	62%	82%	82%	83%	83%	83%
PNV-SO-SU26-SB003(9.0-10.0)	100%	84%	84%	78%	78%	78%

Table 7-2 Tracer Recovery Data for Test Pit Samples

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU14-TP001-S	100%	85%	85%	42%	42%	42%
PNV-SO-SU14-TP001-BT	41%	23%	23%	36%	36%	36%
PNV-SO-SU14-TP001-NW(3.0-3.5)	100%	33%	33%	62%	62%	62%
PNV-SO-SU14-TP001-SW(5.0)	50%	50%	50%	44%	44%	44%
PNV-SO-SU14-TP001-SW(5.0) dup	100%	40%	40%	53%	53%	53%
PNV-SO-SU14-TP001-EW(3.5-4.0)	100%	70%	70%	62%	62%	62%
PNV-SO-SU14-TP002-S	93%	53%	53%	84%	84%	84%
PNV-SO-SU14-TP002-BT	100%	48%	48%	77%	77%	77%
PNV-SO-SU14-TP002-NW(6.0)	93%	57%	57%	77%	77%	77%
PNV-SO-SU14-TP002-WW(1.5-2.0)	100%	33%	33%	82%	82%	82%
PNV-SO-SU14-TP003-S	100%	85%	85%	79%	79%	79%
PNV-SO-SU14-TP003-BT	95%	87%	87%	66%	66%	66%
PNV-SO-SU14-TP003-SW(5.0-5.5)	100%	89%	89%	48%	48%	48%
PNV-SO-SU14-TP003-WW(4.0-4.5)	75%	85%	85%	15%	15%	15%
PNV-SO-SU14-TP003-WW(4.0-4.5) dup	92%	78%	78%	58%	58%	58%
PNV-SO-SU15-TP001-S	100%	86%	86%	43%	43%	43%
PNV-SO-SU15-TP001-BT	100%	89%	89%	23%	23%	23%
PNV-SO-SU15-TP001-EW(2.0-3.0)	62%	88%	88%	64%	64%	64%
PNV-SO-SU15-TP001-EW(2.0-3.0) dup	100%	75%	75%	70%	70%	70%
PNV-SO-SU15-TP001-WW(2.5)	100%	81%	81%	2%	2%	2%
PNV-SO-SU15-TP002-S	81%	77%	77%	87%	87%	87%
PNV-SO-SU15-TP002-BT	100%	84%	84%	42%	42%	42%
PNV-SO-SU15-TP002-NW(1.5-2.0)	100%	84%	84%	66%	66%	66%
PNV-SO-SU15-TP002-NW(1.5-2.0) dup	100%	77%	77%	74%	74%	74%
PNV-SO-SU15-TP002-SW(3.5-4.0)	100%	79%	79%	52%	52%	52%
PNV-SO-SU15-TP003-S	97%	74%	74%	46%	46%	46%
PNV-SO-SU15-TP003-BT	84%	77%	77%	52%	52%	52%
PNV-SO-SU15-TP003-NW(6.0)	100%	72%	72%	71%	71%	71%
PNV-SO-SU15-TP003-SW(6.0)	100%	67%	67%	81%	81%	81%
PNV-SO-SU16-TP001-S	77%	83%	83%	69%	69%	69%
PNV-SO-SU16-TP001-BT	85%	67%	67%	26%	26%	26%
PNV-SO-SU16-TP001-NW(5.5)	100%	77%	77%	64%	64%	64%

Table 7-2 Tracer Recovery Data for Test Pit Samples (continued)

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU16-TP001-NW(5.5) dup	98%	79%	79%	67%	67%	67%
PNV-SO-SU16-TP001-WW(5.0)	100%	73%	73%	62%	62%	62%
PNV-SO-SU16-TP002-S	100%	38%	38%	79%	79%	79%
PNV-SO-SU16-TP002-BT	57%	53%	53%	79%	79%	79%
PNV-SO-SU16-TP002-NW(5.5-6.0)	95%	70%	70%	41%	41%	41%
PNV-SO-SU16-TP002-WW(6.0)	97%	77%	77%	51%	51%	51%
PNV-SO-SU18-TP001-S	100%	88%	88%	59%	59%	59%
PNV-SO-SU18-TP001-BT	74%	70%	70%	50%	50%	50%
PNV-SO-SU18-TP001-NW(5.5)	100%	82%	82%	36%	36%	36%
PNV-SO-SU18-TP001-SW(5.0)	100%	77%	77%	33%	33%	33%
PNV-SO-SU18-TP002-BT	41%	80%	80%	63%	63%	63%
PNV-SO-SU18-TP002-EW(5.5)	100%	59%	59%	67%	67%	67%
PNV-SO-SU18-TP002-WW(6.0)	93%	79%	79%	45%	45%	45%
PNV-SO-SU19-TP001-S	52%	79%	79%	82%	82%	82%
PNV-SO-SU19-TP001-BT	90%	93%	93%	68%	68%	68%
PNV-SO-SU19-TP001-EW(5.5-6.0)	84%	86%	86%	46%	46%	46%
PNV-SO-SU19-TP001-WW(5.0)	100%	79%	79%	56%	56%	56%
PNV-SO-SU19-TP002-S	73%	31%	31%	56%	56%	56%
PNV-SO-SU19-TP002-BT	100%	55%	55%	58%	58%	58%
PNV-SO-SU19-TP002-NW(4.5-5.0)	73%	78%	78%	59%	59%	59%
PNV-SO-SU19-TP002-WW(5.0-5.5)	100%	63%	63%	68%	68%	68%
PNV-SO-SU19-TP003-S	79%	88%	88%	62%	62%	62%
PNV-SO-SU19-TP003-BT	77%	75%	75%	63%	63%	63%
PNV-SO-SU19-TP003-NW(5.0)	92%	78%	78%	47%	47%	47%
PNV-SO-SU19-TP003-WW(4.5)	57%	74%	74%	36%	36%	36%
PNV-SO-SU19-TP003-WW(4.5) dup	100%	53%	53%	53%	53%	53%
PNV-SO-SU19-TP004-S (Stairway)	62%	83%	83%	39%	39%	39%
PNV-SO-SU20-TP001-S (0.0-0.5)	51%	85%	85%	73%	73%	73%
PNV-SO-SU20-TP001-BT	95%	87%	87%	55%	55%	55%
PNV-SO-SU20-TP001-NW(5.0)	100%	85%	85%	61%	61%	61%
PNV-SO-SU20-TP001-NW(5.0) dup	100%	85%	85%	68%	68%	68%

Table 7-2 Tracer Recovery Data for Test Pit Samples (continued)

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU20-TP001-WW(5.0)	54%	81%	81%	69%	69%	69%
PNV-SO-SU20-TP001-WW(5.0) dup	90%	86%	86%	81%	81%	81%
PNV-SO-SU20-TP002-S (0.0-0.5)	100%	90%	90%	54%	54%	54%
PNV-SO-SU20-TP002-BT	88%	93%	93%	55%	55%	55%
PNV-SO-SU20-TP002-NW(5.5-6.0)	88%	87%	87%	67%	67%	67%
PNV-SO-SU20-TP002-WW(3.5-4.0)	100%	90%	90%	65%	65%	65%
PNV-SO-SU20-TP002-WW(3.5-4.0) dup	100%	88%	88%	21%	21%	21%
PNV-SO-SU21-TP001-S	52%	46%	46%	76%	76%	76%
PNV-SO-SU21-TP001-BT	100%	11%	11%	59%	59%	59%
PNV-SO-SU21-TP001-SW(3.0-4.0)	100%	77%	77%	66%	66%	66%
PNV-SO-SU21-TP001-SW(3.0-4.0) dup	100%	45%	45%	67%	67%	67%
PNV-SO-SU21-TP001-WW(3.0-4.0)	100%	19%	19%	53%	53%	53%

8.0 QUALITY ASSURANCE/QUALITY CONTROL

8.1 Field Instrumentation Quality Control Results

Radiological survey and stationary instruments used during the Painesville Pre-Remediation VURS effort are listed ***Table 8-1***.

Table 8-1 Radiological Survey and Stationary Instruments

Instrument Model Serial Number	Detector Model Serial Number	Calibration Date	Principle Detectable Emissions	Primary Application
Ludlum 2221 190170	Ludlum 44-20 PR277116	5-11-09	Gamma	DHG Logging, Core and Test Pit Evaluation
Ludlum 2221 152189	Ludlum 44-20 PR277108	5-11-09	Gamma	DHG Logging, Core and Test Pit Evaluation
Ludlum 2221 172031	Ludlum 44-20 PR277111	5-11-09	Gamma	DHG Logging, Core and Test Pit Evaluation
Ludlum 2360 227433	Ludlum 43-93 PR244541	4-8-09	Alpha/Beta	Personnel, Material and Equipment Frisking
Ludlum 2360 184900	Ludlum 43-93 PR244501	4-8-09	Alpha/Beta	Personnel, Material and Equipment Frisking
Ludlum 2360 234860	Ludlum 43-93 PR238091	4-8-09	Alpha/Beta	Personnel, Material and Equipment Frisking
Ludlum 2360 170550	Ludlum 43-93 PR244541	4-13-09	Alpha/Beta	Personnel, Material and Equipment Frisking
Bicron MicroRem 2015	N/A	11-17-08	Gamma	Material and Equipment Surveys
Ludlum 3030 247862	N/A	4-23-09	Alpha/Beta	Smear and Air Sample Counting

DHG = downhole gamma.
N/A = not applicable.

All survey instruments used during the project were in calibration and were calibrated to National Institute of Standards and Technology (NIST) traceable standards. Copies of instrument calibration certificates can be found in Appendix J of this report.

Quality control (QC) checks were performed daily on all instruments prior to use. A ±20% operability criterion was applied to all QC checks. Daily instrument QC check records can be found in Appendix J of this report.

8.2 Quality Assurance/Quality Control Samples

In order to comply with USACE sampling protocols, the number of field duplicates, MS/MSD samples, and QA splits were 10%, 5%, and 5%, respectively, of the total number of soil samples collected. Field QC and USACE QA duplicate samples were collected simultaneously, or in immediate succession, with the original sample. ***Table 8-2*** below lists the number of test pit field samples, field duplicates samples, MS/MSD samples, and QA split samples collected.

Table 8-2 Test Pit QA/QC Samples

Survey Unit	Number of Test Pits	Field Samples	Field Duplicate Samples	MS/MSD Samples	USACE QA Split Samples
SU14	3	12	2	2	2
SU15	3	12	2	1	1
SU16	2	8	1	1	1
SU18	2	8	1	1	1
SU19	3	12	2	1	1
SU20	2	8	1	1	1
SU21	1	4	1	1	1
TOTALS	**16**	**64**	**10**	**8**	**8**

MS/MSD = matrix spike/matrix spike duplicate.
QA = quality assurance.
QC = quality control.
USACE = U.S. Army Corps of Engineers.

Table 8-3 below lists the number of borehole field samples, field duplicates samples, MS/MSD samples, and QA split samples collected.

Table 8-3 Borehole QA/QC Samples

Survey Unit	Number of Boreholes	Field Samples	Field Duplicate Samples	MS/MSD Samples	USACE QA Split Samples
SU1	2	6	1	1	1
SU2	3	9	1	1	1
SU13	4	12	2	2	1
SU17	5	15	2	1	1
SU22	7	21	3	1	2
SU23	6	18	2	1	1
SU25	2	6	1	1	1
SU26	3	9	1	1	1
TOTALS	**32**	**96**	**13**	**9**	**9**

MS/MSD = matrix spike/matrix spike duplicate.
QA = quality assurance.
QC = quality control..
USACE = U.S. Army Corps of Engineers.

Field duplicate samples were sent to the ARS laboratory for analysis. QA split samples were sent to Eberline Services in Oak Ridge, Tennessee, for analysis. All samples were analyzed for Ra-226, Th-230, Th-232, U-234, U-235, and U-238.

Although MS/MSD samples were collected, there is no approved method for preparing and analyzing MS/MSD samples for radiological constituents. Tracer recoveries are utilized during radiological analysis in place of MS/MSD samples.

The vast majority of field duplicate sample results were within ±2 sigma of the associated field sample. A few field duplicate sample results were not within ±2 sigma of the associated field sample result. This could be due to statistical outliers or due to differences in count times of the field sample and associated field duplicate sample yielding a smaller 2 sigma uncertainty error for one of the

samples. This could also be due to imperfect homogenous mixing of sample material prior to splitting the original material into a field sample and field duplicate sample. ***Table 8-4*** below contains field sample and associated field duplicate sample results for soil core samples. ***Table 8-5*** below contains field sample and associated field duplicate sample results for test pit samples. QA sample results are also contained in Appendix I of this report. ***Table 8-6*** contains tracer recovery data for regular samples and associated duplicate samples for soil boring results, and ***Table 8-7*** contains tracer recovery data for regular samples and associated duplicate samples for test pit results.

Table 8-4 Soil Core Field Sample and Associated Field Duplicate Sample Results

Sample I.D.	Ra-226 (pCi/g)	Ra-226 2σ (pCi/g)	Th-230 (pCi/g)	Th-230 2σ (pCi/g)	Th-232 (pCi/g)	Th-232 2σ (pCi/g)	U-234 (pCi/g)	U-234 2σ (pCi/g)	U-235 (pCi/g)	U-235 2σ (pCi/g)	U-238 (pCi/g)	U-238 2σ (pCi/g)	Total Uranium (pCi/g)
PNV-SO-SU14-TP001-SW(5.0)	0.446	0.220	0.911	0.278	1.090	0.304	1.263	0.330	0.081	0.080	1.150	0.315	2.494
PNV-SO-SU14-TP001-SW(5.0) dup	0.576	0.314	0.834	0.282	0.677	0.270	0.997	0.276	0.055	0.063	1.058	0.284	2.110
PNV-SO-SU14-TP003-WW(4.0-4.5)	0.508	0.198	0.950	0.220	0.810	0.200	0.771	0.418	0.119	0.166	0.359	0.374	1.249
PNV-SO-SU14-TP003-WW(4.0-4.5) dup	0.843	0.304	1.100	0.250	1.020	0.240	0.802	0.230	0.026	0.045	0.891	0.245	1.719
PNV-SO-SU15-TP001-EW(2.0-3.0)	1.029	0.359	1.490	0.290	1.110	0.240	1.079	0.279	-0.011	0.015	1.170	0.288	2.238
PNV-SO-SU15-TP001-EW(2.0-3.0) dup	1.657	0.524	1.160	0.240	1.090	0.230	1.164	0.275	0.014	0.028	1.234	0.284	2.412
PNV-SO-SU15-TP002-NW(1.5-2.0)	1.161	0.380	1.560	0.300	1.200	0.250	1.734	0.368	0.094	0.076	2.050	0.412	3.878
PNV-SO-SU15-TP002-NW(1.5-2.0) dup	1.676	0.539	1.780	0.330	1.100	0.250	1.947	0.383	0.023	0.040	1.649	0.343	3.619

Table 8-4 Soil Core Field Sample and Associated Field Duplicate Sample Results (continued)

Sample I.D.	Ra-226 (pCi/g)	Ra-226 2σ (pCi/g)	Th-230 (pCi/g)	Th-230 2σ (pCi/g)	Th-232 (pCi/g)	Th-232 2σ (pCi/g)	U-234 (pCi/g)	U-234 2σ (pCi/g)	U-235 (pCi/g)	U-235 2σ (pCi/g)	U-238 (pCi/g)	U-238 2σ (pCi/g)	Total Uranium (pCi/g)
PNV-SO-SU16-TP001-NW(5.5)	0.011	0.107	1.110	0.250	1.120	0.250	1.568	0.345	0.000	0.036	1.806	0.379	3.374
PNV-SO-SU16-TP001-NW(5.5) dup	0.576	0.205	1.100	0.250	0.880	0.220	1.505	0.323	0.083	0.067	1.721	0.350	3.309
PNV-SO-SU19-TP003-WW(4.5)	0.647	0.239	1.200	0.270	1.000	0.240	1.846	0.481	0.122	0.127	1.688	0.447	3.656
PNV-SO-SU19-TP003-WW(4.5) dup	0.658	0.254	0.820	0.234	0.758	0.217	0.553	0.227	0.043	0.059	0.378	0.178	0.974
PNV-SO-SU20-TP001-NW(5.0)	0.165	0.145	0.860	0.210	0.930	0.220	0.732	0.214	0.040	0.052	0.471	0.165	1.243
PNV-SO-SU20-TP001-NW(5.0) dup	0.665	0.275	0.750	0.190	0.890	0.210	0.449	0.159	0.024	0.041	0.324	0.145	0.797
PNV-SO-SU20-TP001-WW(5.0)	1.048	0.526	0.950	0.230	0.800	0.210	0.984	0.246	0.019	0.041	0.691	0.199	1.694
PNV-SO-SU20-TP001-WW(5.0) dup	1.014	0.368	0.880	0.210	0.890	0.210	0.467	0.154	0.013	0.025	0.451	0.151	0.931
PNV-SO-SU20-TP002-WW(3.5-4.0)	0.471	0.179	1.080	0.230	0.860	0.200	1.546	0.328	0.032	0.049	1.738	0.353	3.316

Table 8-4 Soil Core Field Sample and Associated Field Duplicate Sample Results (continued)

Sample I.D.	Ra-226 (pCi/g)	Ra-226 2σ (pCi/g)	Th-230 (pCi/g)	Th-230 2σ (pCi/g)	Th-232 (pCi/g)	Th-232 2σ (pCi/g)	U-234 (pCi/g)	U-234 2σ (pCi/g)	U-235 (pCi/g)	U-235 2σ (pCi/g)	U-238 (pCi/g)	U-238 2σ (pCi/g)	Total Uranium (pCi/g)
PNV-SO-SU20-TP002-WW(3.5-4.0) dup	0.417	0.214	1.140	0.240	0.980	0.220	1.237	0.457	0.074	0.127	1.630	0.530	2.941
PNV-SO-SU21-TP001-SW(3.0-4.0)	0.369	0.194	0.478	0.156	0.607	0.177	0.525	0.156	0.023	0.031	0.220	0.094	0.768
PNV-SO-SU21-TP001-SW(3.0-4.0) dup	0.354	0.195	0.498	0.201	0.574	0.221	0.335	0.132	0.013	0.026	0.254	0.115	0.602

pCi/g = picocuries per gram
σ = sigma.

Table 8-5 Test Pit Field Sample and Associated Field Duplicate Sample Results

Sample I.D.	Ra-226 (pCi/g)	Ra-226 2σ (pCi/g)	Th-230 (pCi/g)	Th-230 2σ (pCi/g)	Th-232 (pCi/g)	Th-232 2σ (pCi/g)	U-234 (pCi/g)	U-234 2σ (pCi/g)	U-235 (pCi/g)	U-235 2σ (pCi/g)	U-238 (pCi/g)	U-238 2σ (pCi/g)	Total Uranium (pCi/g)
PNV-SO-SU14-TP001-SW(5.0)	0.446	0.220	0.911	0.278	1.090	0.304	1.263	0.330	0.081	0.080	1.150	0.315	2.494
PNV-SO-SU14-TP001-SW(5.0) dup	0.576	0.314	0.834	0.282	0.677	0.270	0.997	0.276	0.055	0.063	1.058	0.284	2.110
PNV-SO-SU14-TP003-WW(4.0-4.5)	0.508	0.198	0.950	0.220	0.810	0.200	0.771	0.418	0.119	0.166	0.359	0.374	1.249
PNV-SO-SU14-TP003-WW(4.0-4.5) dup	0.843	0.304	1.100	0.250	1.020	0.240	0.802	0.230	0.026	0.045	0.891	0.245	1.719
PNV-SO-SU15-TP001-EW(2.0-3.0)	1.029	0.359	1.490	0.290	1.110	0.240	1.079	0.279	-0.011	0.015	1.170	0.288	2.238
PNV-SO-SU15-TP001-EW(2.0-3.0) dup	1.657	0.524	1.160	0.240	1.090	0.230	1.164	0.275	0.014	0.028	1.234	0.284	2.412
PNV-SO-SU15-TP002-NW(1.5-2.0)	1.161	0.380	1.560	0.300	1.200	0.250	1.734	0.368	0.094	0.076	2.050	0.412	3.878
PNV-SO-SU15-TP002-NW(1.5-2.0) dup	1.676	0.539	1.780	0.330	1.100	0.250	1.947	0.383	0.023	0.040	1.649	0.343	3.619

Table 8-5 Test Pit Field Sample and Associated Field Duplicate Sample Results (continued)

Sample I.D.	Ra-226 (pCi/g)	Ra-226 2σ (pCi/g)	Th-230 (pCi/g)	Th-230 2σ (pCi/g)	Th-232 (pCi/g)	Th-232 2σ (pCi/g)	U-234 (pCi/g)	U-234 2σ (pCi/g)	U-235 (pCi/g)	U-235 2σ (pCi/g)	U-238 (pCi/g)	U-238 2σ (pCi/g)	Total Uranium (pCi/g)
PNV-SO-SU16-TP001-NW(5.5)	0.011	0.107	1.110	0.250	1.120	0.250	1.568	0.345	0.000	0.036	1.806	0.379	3.374
PNV-SO-SU16-TP001-NW(5.5) dup	0.576	0.205	1.100	0.250	0.880	0.220	1.505	0.323	0.083	0.067	1.721	0.350	3.309
PNV-SO-SU19-TP003-WW(4.5)	1.14	.0422	1.200	0.270	1.000	0.240	1.846	0.481	0.122	0.127	1.688	0.447	3.656
PNV-SO-SU19-TP003-WW(4.5) dup	0.658	0.254	0.820	0.234	0.758	0.217	0.553	0.227	0.043	0.059	0.378	0.178	0.974
PNV-SO-SU20-TP001-NW(5.0)	0.165	0.145	0.860	0.210	0.930	0.220	0.732	0.214	0.040	0.052	0.471	0.165	1.243
PNV-SO-SU20-TP001-NW(5.0) dup	0.665	0.275	0.750	0.190	0.890	0.210	0.449	0.159	0.024	0.041	0.324	0.145	0.797
PNV-SO-SU20-TP001-WW(5.0)	1.048	0.526	0.950	0.230	0.800	0.210	0.984	0.246	0.019	0.041	0.691	0.199	1.694
PNV-SO-SU20-TP001-WW(5.0) dup	1.014	0.368	0.880	0.210	0.890	0.210	0.467	0.154	0.013	0.025	0.451	0.151	0.931
PNV-SO-SU20-TP002-WW(3.5-4.0)	0.471	0.179	1.080	0.230	0.860	0.200	1.546	0.328	0.032	0.049	1.738	0.353	3.316

Table 8-5 Test Pit Field Sample and Associated Field Duplicate Sample Results (continued)

Sample I.D.	Ra-226 (pCi/g)	Ra-226 2σ (pCi/g)	Th-230 (pCi/g)	Th-230 2σ (pCi/g)	Th-232 (pCi/g)	Th-232 2σ (pCi/g)	U-234 (pCi/g)	U-234 2σ (pCi/g)	U-235 (pCi/g)	U-235 2σ (pCi/g)	U-238 (pCi/g)	U-238 2σ (pCi/g)	Total Uranium (pCi/g)
PNV-SO-SU20-TP002-WW(3.5-4.0) dup	0.417	0.214	1.140	0.240	0.980	0.220	1.237	0.457	0.074	0.127	1.630	0.530	2.941
PNV-SO-SU21-TP001-SW(3.0-4.0)	0.369	0.194	0.478	0.156	0.607	0.177	0.525	0.156	0.023	0.031	0.220	0.094	0.768
PNV-SO-SU21-TP001-SW(3.0-4.0) dup	0.354	0.195	0.498	0.201	0.574	0.221	0.335	0.132	0.013	0.026	0.254	0.115	0.602

pCi/g = picocuries per gram
σ = sigma.

Table 8-6 Tracer Recovery Percentages for Soil Core Samples and Associated Field Duplicates

Soil Boring Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU1-SB001(7.0–8.0)	100%	83%	83%	70%	70%	70%
PNV-SO-SU1-SB001(7.0–8.0) dup	100%	77%	77%	45%	45%	45%
PNV-SO-SU2-SB001(11.0–12.0)	75%	76%	76%	52%	52%	52%
PNV-SO-SU2-SB001(11.0–12.0) dup	100%	86%	86%	60%	60%	60%
PNV-SO-SU13-SB003(8.0–9.0)	41%	36%	36%	53%	53%	53%
PNV-SO-SU13-SB003(8.0–9.0) dup	75%	40%	40%	44%	44%	44%
PNV-SO-SU13-SB004(8.0–9.0)	100%	74%	74%	1%	1%	1%
PNV-SO-SU13-SB004(8.0–9.0) dup	59%	83%	83%	69%	69%	69%
PNV-SO-SU17-SB001(11.0–12.0)	72%	76%	76%	75%	75%	75%
PNV-SO-SU17-SB001(11.0–12.0) dup	72%	74%	74%	64%	64%	64%
PNV-SO-SU17-SB004(7.0–8.0)	100%	82%	82%	70%	70%	70%
PNV-SO-SU17-SB004(7.0–8.0) dup	100%	66%	66%	69%	69%	69%
PNV-SO-SU22-SB002(5.0–6.0)	73%	69%	69%	52%	52%	52%
PNV-SO-SU22-SB002(5.0–6.0) dup	99%	69%	69%	52%	52%	52%
PNV-SO-SU22-SB002(6.0–7.0)	100%	71%	71%	36%	36%	36%
PNV-SO-SU22-SB002(6.0–7.0) dup	90%	48%	48%	60%	60%	60%
PNV-SO-SU22-SB006(7.0–8.0)	86%	3%	3%	63%	63%	63%
PNV-SO-SU22-SB006(7.0–8.0) dup	100%	39%	39%	56%	56%	56%
PNV-SO-SU23-SB002(0.5–1.5)	100%	81%	81%	41%	41%	41%
PNV-SO-SU23-SB002(0.5–1.5) dup	100%	56%	56%	53%	53%	53%
PNV-SO-SU23-SB005(6.0–7.0)	95%	12%	12%	74%	74%	74%
PNV-SO-SU23-SB005(6.0–7.0) dup	63%	26%	26%	66%	66%	66%
PNV-SO-SU25-SB002(8.0–9.0)	100%	77%	77%	40%	40%	40%

Table 8-6 Tracer Recovery Percentages for Soil Core Samples and Associated Field Duplicates (continued)

Soil Boring Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU25-SB002(8.0–9.0) dup	53%	85%	85%	71%	71%	71%
PNV-SO-SU26-SB002(8.0–9.0)	90%	79%	79%	54%	54%	54%
PNV-SO-SU26-SB002(8.0–9.0) dup	100%	73%	73%	39%	39%	39%

Table 8-7 Tracer Recovery Percentages for Test Pit Samples and Associated Field Duplicates

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU14-TP001-SW(5.0)	50%	50%	50%	44%	44%	44%
PNV-SO-SU14-TP001-SW(5.0) dup	100%	40%	40%	53%	53%	53%
PNV-SO-SU14-TP003-WW(4.0–4.5)	75%	85%	85%	15%	15%	15%
PNV-SO-SU14-TP003-WW(4.0–4.5) dup	92%	78%	78%	58%	58%	58%
PNV-SO-SU15-TP001-EW(2.0–3.0)	62%	88%	88%	64%	64%	64%
PNV-SO-SU15-TP001-EW(2.0–3.0) dup	100%	75%	75%	70%	70%	70%
PNV-SO-SU15-TP002-NW(1.5–2.0)	100%	84%	84%	66%	66%	66%
PNV-SO-SU15-TP002-NW(1.5–2.0) dup	100%	77%	77%	74%	74%	74%
PNV-SO-SU16-TP001-NW(5.5)	100%	77%	77%	64%	64%	64%
PNV-SO-SU16-TP001-NW(5.5) dup	98%	79%	79%	67%	67%	67%
PNV-SO-SU19-TP003-WW(4.5)	57%	74%	74%	4%	4%	4%
PNV-SO-SU19-TP003-WW(4.5) dup	100%	53%	53%	41%	41%	41%
PNV-SO-SU20-TP001-NW(5.0)	100%	85%	85%	61%	61%	61%
PNV-SO-SU20-TP001-NW(5.0) dup	100%	85%	85%	68%	68%	68%
PNV-SO-SU20-TP001-WW(5.0)	54%	81%	81%	69%	69%	69%
PNV-SO-SU20-TP001-WW(5.0) dup	90%	86%	86%	81%	81%	81%
PNV-SO-SU20-TP002-WW(3.5–4.0)	100%	90%	90%	65%	65%	65%

Table 8-7 Tracer Recovery Percentages for Test Pit Samples and Associated Field Duplicates (continued)

Sample I.D.	Ra-226 Recovery (percent)	Th-230 Recovery (percent)	Th-232 Recovery (percent)	U-234 Recovery (percent)	U-235 Recovery (percent)	U-238 Recovery (percent)
PNV-SO-SU20-TP002-WW(3.5-4.0) dup	100%	88%	88%	21%	21%	21%
PNV-SO-SU21-TP001-SW(3.0-4.0)	100%	77%	77%	66%	66%	66%
PNV-SO-SU21-TP001-SW(3.0-4.0) dup	100%	45%	45%	45%	45%	45%

9.0 FIELD CHANGES TO FSP AND QAPP

During the course of the field implementation of the SAP and its components, the FSP and the QAPP, a minimal number of field changes were made to the Rev. 0 accepted plans to enable safe and efficient collection of samples and data without impacting the overall goals of the project. The field changes fall into one of six categories, as follows:

- field relocation of soil boring or test pit locations to accommodate field constraints;
- variation in the conduct of field radiological screening techniques to accommodate worker safety concerns;
- outsourcing of a number of the isotopic thorium samples to Test America Laboratory in St. Louis, Missouri;
- elimination of the analysis of collected MS/MSD samples for radiological constituents (refer to Section 9.4 of this report); and
- accounting for an additional sample collected due to field observations.

9.1 Field Relocation of Soil Borings and Test Pit Locations

During the layout and implementation of the soil boring and test pits, it became evident that a small percentage of the soil borings and test pits needed to be relocated to address various interferences resulting from the location's proximity to power lines, site boundary fencing, known underground utilities, and aboveground features. The list of these relocations includes:

- SU2SB001 – Relocated to avoid drilling through reinforced concrete pad.
- SU2SB002 – Relocated to avoid drilling into suspected underground 12-in. reinforced concrete sewer piping.
- SU2SB003 – Relocated to avoid drilling through reinforced concrete pad.
- SU13SB001 – Relocated due to drill rig encountering refusal at depths <12 ft.
- SU17SB001 – Relocated to avoid drill rig interference with energized overhead power lines.
- SU22SB001 – Relocated to move location off road surface and into drainage swale.
- SU22SB002 – Relocated due to drill rig encountering refusal at depths <12 ft.
- SU22SB003 – Relocated because original location was too close to fence to allow for safe operation of drill rig.
- SU22SB004 – Relocated because original location was too close to fence to allow for safe operation of drill rig.
- SU22SB005 – Relocated because original location was too close to fence to allow for safe operation of drill rig.
- SU26SB002 – Relocated due to drill rig encountering refusal at depths <12 ft.
- SU15-TP003 – This was a new test pit location added at the request of the Ohio EPA (replaced SU19TP004 – see below).
- SU16-TP002 – Relocated to avoid excavating through concrete pad.
- SU19-TP004 – Relocated originally to encompass the suspect "stairwell" adjacent to the former scale house. This SU was eventually eliminated when it was determined that the "stairwell" was actually a 1.5- to 2-ft-deep sump (see SU15-TP003 above).

9.2 Variation in Field Radiological Screening Techniques

As approved, the FSP indicated that the field radiological screening of the test pits' walls should be performed starting at the bottom of the test pit and working upward to the "at grade" elevation. This technique was revised in the field to ensure greater worker safety while working in the test pits to an overall depth of 6 ft.

The OSHA-prescribed limit for allowing personnel access to an excavation without shoring, benching or sloping is 4 ft. ARSEC implemented the following excavation approach:

- the 10-ft × 10-ft pit footprint was excavated to a depth of 2 ft, and technicians surveyed the four pit walls from 0 to 2 ft bgs,
- the excavation was benched a minimum of 2 ft away from the original limits of the footprint and the original footprint deepened from 2 ft bgs to 6 ft bgs, and
- ARSEC personnel reentered the excavation and scanned the lower half of the sidewalls (2 to 6 ft bgs) and the test pit floor.

Using this order of excavation and surveying, the radiological screening was actually performed from the top (at grade elevation) down to the test pit floor on all four sidewalls. To avoid the potential for having the highest radiological level on the sidewalls not be sampled, ARSEC personnel collected representative samples from the highest readings on the top half of each of the four sidewalls and held those samples until the lower portion of the sidewalls was excavated and screened. If the lower half of the sidewall proved to have higher radiological levels than the upper half, the samples collected from the upper half were returned to the final excavation prior to backfilling. Therefore, ARSEC is confident that this field deviation had no impact to the quality of the data collected for each test pit.

9.3 Outsourcing of a Portion of Isotopic Thorium Samples

During the performance of the analytical analysis of the samples collected at the Site, the ARS laboratory had a piece of equipment needed to perform the isotopic thorium samples breakdown. Because of the upcoming holiday weekend (Memorial Day), ARS was unable to have the manufacturer service/repair the equipment in a timely manner to support the data analysis requirements stipulated in the FSP and QAPP.

With the consent of the Buffalo District and ARSEC, the ARS laboratory shipped 109 samples from the Site to the Test America Laboratory in St. Louis, Missouri, for isotopic thorium analysis. ARSEC is confident that the analytical results provided by Test America Laboratory will fully comply with all data quality requirements stipulated in the SOW and the approved QAPP.

9.4 Elimination of MS/MSD Analysis on Radiological Samples

During the implementation of the FSP, ARSEC collected and shipped the MS/MSD samples as delineated in the approved FSP. Once the samples were received at ARS, Port Allen, Louisiana, the ARS Laboratory Director contacted the ARSEC Site Manager and indicated that the MS/MSD samples were not needed for radiological samples since there is no approved method for preparing and analyzing MS/MSD samples for radiological constituents. Tracer recoveries are utilized during radiological analysis in place of MS/MSD samples. Therefore, the collected MS/MSD samples are being stored/archived at the ARS Laboratory and will be used if additional analysis of a particular soil

boring and/or test pit is required in the future. Tables 8-6 and 8-7 contain data relating to tracer recovery of regular field samples and associated duplicates for soil borings and test pits.

9.5 Collection and Analysis of an Additional TCLP Sample

During the installation of the soil boring at SU2SB002, ARSEC personnel noticed a strong organic odor emanating from the bagged cores. Subsequent monitoring with the PID indicated that the core had an elevated reading for VOCs, CO, and hydrogen sulfide (H_2S). After a brief conversation with the Buffalo District's onsite representative, ARSEC decided to collect an additional TCLP sample series from this soil boring location and have that sample analyzed in accordance with the protocols and methods delineated in the QAPP for the four TCLP samples collected from SU23SB001, SU23SB002, SU23SB005, and SU23SB006.

No other significant field changes are known to have been made to the protocols and requirements stipulated in the Rev. 0 versions of the FSP and/or the QAPP.

10.0 RESULTS

This section provides a summary of gamma measurements, sampling results, and evaluations of the results for the Painesville FUSRAP VURS project.

Surface gamma count rates on the western portion of the Site in the areas of the soil borings generally ranged between 5,000 counts per minute (cpm) and 10,000 cpm. Surface gamma count rates on the eastern portion of the Site in the areas of the test pits generally ranged between 2,200 cpm and 5,000 cpm.

The FSP did not require the establishment of a reference background area, and reference surface background gamma count rates were not collected. However, surface soil samples collected from test pits in Class 2 areas in the eastern portion of the Site yielded RCOC activity values that are generally indicative of historically established background activity levels for the Site. This is an indication that the surface count rates described above for the eastern portion of the Site represent, or are close to, actual background values. RCOC activity values for test pits can be found in Appendix I of this report. Surface samples were not collected from borehole locations in Class 2 areas in the western portion of the Site per the FSP, and surface gamma count rates may, or may not, be indicative of actual background values.

Surface gamma counts rates differed between the eastern and western portions of the Site due to differences in surface materials. The eastern Site surface was primarily composed of crushed stone, rock, concrete, brick, and building construction materials with smaller amounts of soil. The western Site surface was primarily composed of soil.

A reference background area for borehole and test pit sub-surface background count rate measurements was not required by the FSP, and background sub-surface count rate data were not collected for boreholes and test pits.

Test pits were excavated in the eastern portion of the Site. The highest test pit sidewall gross gamma count rates generally ranged between 9,200 cpm and 12,500 cpm, and the highest test pit bottom gross gamma count rates generally ranged between 8,500 cpm and 11,000 cpm. Boreholes were drilled in the western portion of the Site. The highest DHG count rates measured in boreholes generally ranged between 15,000 cpm and 20,500 cpm. The difference in sub-surface gross gamma count rates between the eastern and western portions of the Site is believed to be primarily due to differences in the geometry of the material being counted, e.g., soil surrounded the sides of the detector in the boreholes. Soil was located under the detector for test pit measurements. Another contributing factor to the difference in the sub-surface gross gamma count rates between the eastern and western portions of the Site may be differences in soil composition at various depths. Different types of soil and clay contain different amounts of radioactivity. Test pits were only excavated to a depth of 6 ft, while boreholes were drilled to depths of 12 ft. A different type of soil or clay may be present at the Site in the upper 6-ft depth interval than in the 6-ft to 12-ft depth interval.

Sum of Ratios for Derived Concentration Guideline Level, Wilcox Rank Sum (SOR $DCGL_w$) and Sum of Ratios for Derived Concentration Guideline Level, Elevated Measurement Comparison (SOR $DCGL_{emc}$) values were calculated for each radiological sample collected. The vast majority of sample results indicated activity levels less than established background levels. Established background activity levels were subtracted from actual sample results, resulting in negative SOR values for the

majority of the samples. Net (after background subtraction) Ra-226, Th-230, Th-232, and total uranium activity values were all responsible for contributing to negative SOR values, with Th-232 being the largest contributor. RCOC sample results with negative net activity values were set to zero for inclusion in SOR $DCGL_w$ and SOR $DCGL_{emc}$ equations to preclude negative SOR values and to maintain consistency with other historical SOR calculation methodologies used for the Site. All samples had SOR $DCGL_w$ and SOR $DCGL_{emc}$ values less than 1 when negative net RCOC values were set to zero. A more detailed discussion of the methodology used to calculate SOR $DCGL_w$ and SOR $DCGL_{emc}$ values is contained in Section 11.1 of this report.

10.1 Borehole and Core Survey Results

Surface gamma static counts, DHG measurements, and gamma core scans were completed for each borehole location. Surface gamma static counts, the highest DHG measurement, and the highest core scan measurement are shown in ***Table 10-1*** below.

Table 10-1 Borehole Gamma Measurements

Location	Surface Scan (cpm)	Highest DHG (cpm)	Depth of Highest DHG (ft bgs)	Highest Core Scan (cpm)	Depth of Highest Core Scan (ft bgs)	Notes
SU1-SB001	11,155	20,330	12.0	13,159	10.0	
SU1-SB002	10,318	22,390	12.0	14,344	8.0	
SU2-SB001	4,113	21,870	11.5	9,425	7.5	Moved 6.5 ft west and 6.7 ft north
SU2-SB002	26,930	24,545	12.0	10,011	3.0	Moved 6 ft west and 1 ft south
SU2-SB003	7,411	20,725	7.5	9,741	3.5	Moved 16.5 ft north and 7.0 ft east
SU13-SB001	7,568	20,514	9.5	10,516	10.0	Hole moved 18.5 ft south
SU13-SB002	7,354	23,166	5.0	12,733	10.5	Void from 4.0 ft to 5.5 ft; poor soil core recovery from 2 ft to 5.0 ft
SU13-SB003	8,894	19,696	8.5	11,307	10.5	
SU13-SB004	9,307	19,958	8.0	10,842	5.0	
SU17-SB001	6,790	22,812	12.0	9,953	11.0	Moved south to parking lot west of Administration Building to avoid overhead power line
SU17-SB002	8,725	21,056	11.0	9,720	1.5	
SU17-SB003	6,000	19,914	7.5	9,600	2.0	Cave-in and refusal from 11.0 to 12.0 ft
SU17-SB004	9,894	20,808	8.5	12,381	10.5	Cave-in and refusal from 11.0 to 12.0 ft
SU17-SB005	6,334	19,175	5.5	8,446	12.0	
SU22-SB001	9,306	22,139	3.5	9,997	12.0	Moved 5.0 ft east and 1.0 ft south

Table 10-1 Borehole Gamma Measurements (continued)

Location	Surface Scan (cpm)	Highest DHG (cpm)	Depth of Highest DHG (ft bgs)	Highest Core Scan (cpm)	Depth of Highest Core Scan (ft bgs)	Notes
SU22-SB002	3,836	19,617	5.0	7,634	7.5	Moved 5.0 ft south
SU22-SB003	9,886	20,479	8.5	12,640	8.0	Moved 10 ft south away from northern fence line –ditch
SU22-SB004	10,933	22,165	5.5	15,324	8.5	Moved 5 ft south away from northern fence line –ditch
SU22-SB005	11,144	21,073	4.0	13,918	8.0	Moved 5.0 ft south away from northern fence line –ditch
SU22-SB006	9,791	20,708	9.5	11,398	8.0	Poor soil core recovery from 2.5 ft to 6.0 ft
SU22-SB007	10,431	20,348	9.0	11,851	8.0	
SU23-SB001	10,230	23,074	4.0	11,173	8.5	
SU23-SB002	10,793	23,993	1.5	13,512	2.0	
SU23-SB003	10,394	20,532	3.5	15,123	4.5	
SU23-SB004	9,141	21,685	8.0	8,830	10.5	
SU23-SB005	10,776	19,454	6.5	9,965	8.5	
SU23-SB006	10,836	23,477	12.0	13,129	6.5	
SU25-SB001	8,521	21,462	7.5	11,048	7.5	
SU25-SB002	9,991	20,983	7.5	12,653	4.0	
SU26-SB001	12,067	21,636	4.0	14,228	12.0	
SU26-SB002	12,362	20,630	9.5	12,725	8.0	Moved 5.0 ft south
SU26-SB003	5,030	20,238	8.5	12,435	12.0	
Averages	9,571	21,270		11,516		

cpm = counts per minute.
DHG = downhole gamma (logging).
ft = feet.
bgs = below ground surface
SU = survey unit.

10.2 Borehole and Core Laboratory Results

Soil samples were collected from the highest DHG 1-ft measurement and from the 1-ft intervals directly above and directly below the highest DHG 1-ft measurement of each soil boring. When the highest DHG measurement was found at the deepest 1-ft interval in the borehole, samples were collected from the two 1-ft sampling intervals above the deepest 1-ft interval and from the deepest 1-ft interval itself. RCOC sample results with negative net activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_w$ equation. No soil core samples were found to exceed an SOR_{DCGLw} value of 1. The equation used to calculate the SOR values is shown below. The fraction of the SOR_{DCGLw} for soil core samples collected is summarized in ***Table 10-2*** below.

$$SOR_{DCGLw} = \frac{Ra-226}{9} + \frac{Th-230}{25} + \frac{Th-232}{6} + \frac{U-234+U-235+U-238}{482}$$

Since the sample intervals covered 12-in. depths compared to the 6-in. measurement intervals for the DHG cpm measurements, the two 6-in. DHG cpm results for each foot below ground surface were averaged for use in Table 10-2. The first, second, and third intervals listed in the column headings in ***Table 10-2*** below refer to increasing depth intervals, with the third interval pertaining to the lowest depth. The Second 1-ft Sampling Interval is the highest cpm measurement. The First 1-ft Sampling Interval is the cpm for the 1-ft interval above the highest cpm, and the Third 1-ft Sampling Interval is the cpm for the 1-ft interval below the highest cpm.

Table 10-2 Borehole SOR $DCGL_w$ Values

Borehole Location	First 1-ft Sampling Interval			Second 1-ft Sampling Interval			Third 1-ft Sampling Interval		
	Depth Interval (ft)	DHG (cpm)	SOR $DCGL_w$	Depth Interval (ft)	DHG (cpm)	SOR $DCGL_w$	Depth Interval (ft)	DHG (cpm)	SOR $DCGL_w$
SU1-SB001	6 – 7	19,510	0.0	7 – 8	19,736	0.0	8 – 9	19,748	0.0
SU1-SB002	6 – 7	19,276	0.0	7 – 8	19,713	0.0	8 – 9	19,935	0.0
SU2-SB001	9 – 10	15,316	0.0	10 – 11	15,834	0.0	11 – 12	19,284	0.0
SU2-SB002	9 – 10	15,756	0.0	10 – 11	16,912	0.0	11 – 12	20,332	0.0
SU2-SB003	6 – 7	19,463	0.0	7 – 8	20,322	0.0	8 – 9	20,520	0.0
SU13-SB001	8 – 9	19,922	0.54	9 – 10	20,488	0.0	10 – 11	20,208	0.0
SU13-SB002	6 – 7	21,069	0.0	7 – 8	20,021	0.0	8 – 9	18,569	0.0
SU13-SB003	7 – 8	19,541	0.0	8 – 9	19,646	0.0	9 – 10	19,609	0.0
SU13-SB004	7 – 8	17,601	0.0	8 – 9	19,789	0.0	9 – 10	18,615	0.05
SU17-SB001	9 – 10	15,358	0.0	10 – 11	15,270	0.0	11 – 12	18,838	0.0
SU17-SB002	9 – 10	9,988	0.0	10 – 11	19,181	0.0	11 – 12	20,895	0.02
SU17-SB003	7 – 8	19,627	0.0	8 – 9	19,371	0.0	9 – 10	15,745	0.0
SU17-SB004	7 – 8	19,954	0.05	8 – 9	20,712	0.0	9 – 10	20,161	0.0
SU17-SB005	4 – 5	16,767	0.0	5 – 6	18,824	0.0	6 – 7	18,606	0.0
SU22-SB001	3 – 4	21,346	0.0	4 – 5	21,215	0.09	5 – 6	19,558	0.0
SU22-SB002	4 – 5	18,371	0.0	5 – 6	19,494	0.0	6 – 7	18,805	0.0
SU22-SB003	3 – 4	19,949	0.08	4 – 5	19,809	0.0	5 – 6	18,512	0.0
SU22-SB004	4 – 5	21,303	0.0	5 – 6	22,026	0.0	6 – 7	21,213	0.0
SU22-SB005	3 – 4	20,909	0.0	4 – 5	21,036	0.0	5 – 6	20,704	0.0
SU22-SB006	7 – 8	19,820	0.07	8 – 9	19,754	0.0	9 – 10	20,472	0.0
SU22-SB007	7 – 8	19,093	0.95	8 – 9	20,183	0.64	9 – 10	20,049	0.43
SU23-SB001	2 – 3	15,723	0.04	3 – 4	18,803	0.29	4 – 5	22,859	0.0
SU23-SB002	0.5 – 1.5	14,710	0.0	1.5 – 2.5	23,702	0.57	2.5 – 3.5	19,052	0.0
SU23-SB003	2 – 3	13,065	0.0	3 – 4	19,760	0.0	4 – 5	19,844	0.0
SU23-SB004	6 – 7	16,425	0.0	7 – 8	20,148	0.0	8 – 9	21,482	0.0
SU23-SB005	5 – 6	19,412	0.0	6 – 7	19,400	0.0	7 – 8	18,808	0.0
SU23-SB006	9 – 10	13,487	0.0	10 – 11	16,384	0.0	11 – 12	19,365	0.01
SU25-SB001	5 – 6	20,404	0.0	6 – 7	20,789	0.0	7 – 8	21,426	0.0
SU25-SB002	6 – 7	20,457	0.0	7 – 8	20,865	0.0	8 – 9	20,757	0.0
SU26-SB001	3 – 4	21,098	0.0	4 – 5	21,522	0.0	5 – 6	21,148	0.0
SU26-SB002	7 – 8	19,944	0.0	8 – 9	20,446	0.0	9 – 10	20,624	0.0
SU26-SB003	7 – 8	19,620	0.0	8 – 9	20,030	0.12	9 – 10	18,531	0.0

cpm = counts per minute.
$DCGL_w$ = Derived Concentration Guideline Level, Wilcox Rank Sum.
DHG = downhole gamma (logging).
ft = feet.
SB = soil boring.
SOR = sum of ratios.
SU = survey unit.

10.3 Test Pit Survey Results

Gross gamma scans were performed on the surface soils of all test pits prior to excavation. A 1-minute static count was performed on the surface of the test pit in the area of the highest gross

gamma count rate reading. Results of surface gross gamma count rates are summarized in ***Table 10-3*** below.

Test pit surface count rates varied from test pit to test pit based on the geological conditions, e.g. soil, clay, brick, etc., in the area where the test pit was excavated. A reference background test pit was not required by the FSP, and reference background count rates were not collected. However, surface soil samples collected from test pits yielded RCOC activity values that are generally indicative of historically established background activity levels for the site. This is an indication that the test pit surface count rates listed in Table 10-3 below represent, or are close to, actual background values. RCOC activity values for test pit surface samples can be found in Appendix I of this report.

Table 10-3 Test Pit Surface Gross Gamma Survey Results

Test Pit Location	Highest Surface Reading (cpm)	Average Surface Reading (cpm)	Lowest Surface Reading (cpm)
SU14-TP001	5,224	5,000	4,800
SU14-TP002	14,789	11,000	10,789
SU14-TP003	2,596	1,800	1,400
SU15-TP001	4,215	3,500	3,161
SU15-TP002	2,382	1,500	1,411
SU15-TP003	5,206	4,000	3,907
SU16-TP001	4,381	5,000	6,921
SU16-TP002	12,789	10,000	10,283
SU18-TP001	5,489	4,900	3,827
SU18-TP002	5,385	4,800	4,200
SU19-TP001	6,623	6,000	5,745
SU19-TP002	2,404	1,500	1,314
SU19-TP003	2,496	2,000	2,100
SU20-TP001	12,002	10,500	11,023
SU20-TP002	3,000	1,900	1,363
SU21-TP001	2,081	1,600	1,461

cpm = counts per minute
SU = survey unit.

Gross gamma scans were performed on the bottom of excavated test pits. Results of test pit bottom gross gamma count rates are summarized in ***Table 10-4*** below. Test pit bottom count rates varied from test pit to test pit based on the geological conditions, e.g. soil, clay, brick, concrete, etc., in the area where the test pit was excavated. A reference background test pit was not required by the FSP, and reference background count rates were not collected. However, soil samples collected from the bottom of the test pits yielded RCOC activity values that are generally indicative of historically established background activity levels for the site. This is an indication that the test pit bottom count rates listed in Table 10-4 below represent, or are close to, actual background values. RCOC activity values for test pit bottom samples can be found in Appendix I of this report.

Table 10-4 Test Pit Bottom Gross Gamma Survey Results

Test Pit Location	Highest Bottom Reading (cpm)	Average Bottom Reading (cpm)	Lowest Bottom Reading (cpm)
SU14-TP001	11,392	10,000	9,834
SU14-TP002	9,283	8,200	8,606
SU14-TP003	10,004	9,000	8,431
SU15-TP001	8,799	7,500	7,542
SU15-TP002	9,262	8,900	8,577
SU15-TP003	8,997	6,500	4,066
SU16-TP001	10,207	8,500	8,838
SU16-TP002	8,649	8,200	8,118
SU18-TP001	10,165	9,000	8,875
SU18-TP002	9,246	8,700	8,557
SU19-TP001	9,607	8,000	7,968
SU19-TP002	8,653	6,700	5,716
SU19-TP003	9,756	9,900	10,103
SU20-TP001	9,352	8,700	8,696
SU20-TP002	12,874	9,000	6,000
SU21-TP001	9,541	9,000	8,642

cpm = counts per minute
SU = survey unit.

Gross gamma scans were performed on the sidewalls of excavated test pits. A total of 64 sidewalls, representing 16 test pits, were surveyed. Results of test pit sidewall gross gamma count rates are summarized in ***Table 10-5*** below.

Table 10-5 Test Pit Wall Gross Gamma Survey Results

Test Pit Location	Highest Sidewall Reading (cpm)	Location of Highest Reading (Wall, depth)	Lowest Sidewall Reading (cpm)	Location of Lowest Reading (Wall, depth)
SU14-TP001	15,182	South wall, 5.0 ft	3,742	South wall, 0.0 ft
SU14-TP002	11,902	North wall, 6.0 ft	3,010	North wall, 0.0 ft
SU14-TP003	12,710	West wall, 4.5 ft	3,706	East wall, 0.0 ft
SU15-TP001	9,830	West wall, 4.0 ft	4,169	North wall, 0.0 ft
SU15-TP002	10,752	North wall, 1.5 ft	3,128	South wall, 0.0 ft
SU15-TP003	10,679	South wall, 6.0 ft	3,513	North wall, 0.0 ft
SU16-TP001	10,724	North wall, 5.5 ft	4,251	East wall, 0.0 ft
SU16-TP002	9,245	North wall, 6.0 ft	3,013	North wall, 0.0 ft
SU18-TP001	11,794	South wall, 5.0 ft	4,111	South wall, 0.0 ft
SU18-TP002	10,954	East wall, 5.5 ft	3,267	East wall, 0.0 ft
SU19-TP001	13,633	East wall, 5.5 ft	3,803	North wall, 0.0 ft
SU19-TP002	9,296	North wall, 5.5 ft	2,977	East wall, 0.0 ft
SU19-TP003	15,675	North wall, 5.0 ft	2,867	West wall, 0.0 ft
SU20-TP001	10,284	North wall, 6.0 ft	3,060	North wall, 0.0 ft
SU20-TP002	12,228	North wall, 6.0 ft	3,682	East wall, 0.0 ft
SU21-TP001	10,507	West wall, 4.0 ft	3,048	West wall, 0.0 ft

cpm = counts per minute.
ft = feet.
SU = survey unit.

10.4 Test Pit Laboratory Results

A soil sample was collected from the 0.00- to 0.5-ft depth interval of each test pit area in the surface area indicating the highest gross gamma reading prior to excavation. Two sidewall samples and one

bottom sample were also collected from locations within the test pit with the highest gross gamma scan measurements. RCOC sample results with negative net activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_w$ equation. No test pit samples were found to exceed an SOR $DCGL_w$ value of 1. The fraction of the SOR $DCGL_w$ for test pit samples collected is summarized in ***Table 10-6*** below.

Table 10-6 Test Pit Samples – Fraction of SOR $DCGL_w$

Test Pit Location	Surface Sample SOR $DCGL_w$	Sidewall Sample No. 1 SOR $DCGL_w$	Sidewall Sample No. 2 SOR $DCGL_w$	Bottom Sample SOR $DCGL_w$
SU14-TP001	0.0	0.0	0.0	0.0
SU14-TP002	0.0	0.0	0.0	0.02
SU14-TP003	0.0	0.0	0.0	0.0
SU15-TP001	0.0	0.0	0.0	0.0
SU15-TP002	0.0	0.0	0.0	0.0
SU15-TP003	0.04	0.0	0.0	0.0
SU16-TP001	0.0	0.0	0.0	0.0
SU16-TP002	0.0	0.0	0.0	0.0
SU18-TP001	0.0	0.0	0.07	0.0
SU18-TP002	ND	0.0	0.0	0.0
SU19-TP001	0.0	0.0	0.0	0.0
SU19-TP002	0.0	0.0	0.0	0.0
SU19-TP003	0.0	0.0	0.0	0.0
SU20-TP001	0.06	0.0	0.0	0.0
SU20-TP002	0.0	0.0	0.0	0.0
SU21-TP001	0.0	0.0	0.0	0.0

ND = No data; no sample collected.
SOR $DCGL_w$ = sum of ratios for Derived Concentration Level, Wilcox Rank Sum.
SU = survey unit

RCOC sample results with negative net activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_{emc}$ equation. The fraction of the SOR $DCGL_{emc}$ for test pit samples collected is summarized in ***Table 10-7*** below. No test pit samples were found to exceed an SOR $DCGL_{emc}$ value of 1.

Table 10-7 Test Pit Samples – Fraction of SOR $DCGL_{emc}$

Test Pit Location	Surface Sample SOR $DCGL_{emc}$	Sidewall Sample No. 1 SOR $DCGL_{emc}$	Sidewall Sample No. 2 SOR $DCGL_{emc}$	Bottom Sample SOR $DCGL_{emc}$
SU14-TP001	0.0	0.0	0.0	0.0
SU14-TP002	0.0	0.0	0.0	0.02
SU14-TP003	0.0	0.0	0.0	0.0
SU15-TP001	0.0	0.0	0.0	0.0
SU15-TP002	0.0	0.0	0.0	0.0
SU15-TP003	0.03	0.0	0.0	0.0
SU16-TP001	0.0	0.0	0.0	0.0
SU16-TP002	0.0	0.0	0.0	0.0
SU18-TP001	0.0	0.0	0.01	0.0
SU18-TP002	ND	0.0	0.0	0.0
SU19-TP001	0.0	0.0	0.0	0.0
SU19-TP002	0.0	0.0	0.0	0.0
SU19-TP003	0.0	0.0	0.0	0.0

Table 10-7 Test Pit Samples – Fraction of SOR $DCGL_{emc}$ (continued)

Test Pit Location	Surface Sample SOR $DCGL_{emc}$	Sidewall Sample No. 1 SOR $DCGL_{emc}$	Sidewall Sample No. 2 SOR $DCGL_{emc}$	Bottom Sample SOR $DCGL_{emc}$
SU20-TP001	0.05	0.0	0.0	0.0
SU20-TP002	0.0	0.0	0.0	0.0
SU21-TP001	0.0	0.0	0.0	0.0

$DCGL_{emc}$ = Derived Concentration Guideline Level, Elevated Measurement Comparison.
SU = survey unit.
ND No data, sample not collected

11.0 EVALUATION METHODOLOGY

11.1 Derived Concentration Guideline Values

The Painesville Site ROD (USACE 2006b) identified four FUSRAP-eligible RCOCs in Site soils that posed a risk to human health above applicable EPA guidelines: Ra-226 and its decay products (Ra-226+D), Th-230, Th-232 and its decay products (Th-232+D), and total uranium (Total U). All four RCOCs pose risks above EPA guidelines under an industrial use scenario, which has been identified as the reasonable future use scenario for the Site.

DCGLs were developed for two specific areas: 100 square meters (m^2) and 10,000 m^2. The primary DCGL values for each RCOC at the site are based on an area of 10,000 m^2 and depth of 2 m. The $DCGL_W$ applies to the average concentration over an entire SU. The $DCGL_{emc}$ is used as a potential guideline for localized areas of elevated activity. The $DCGL_{emc}$ ensures that while localized areas of elevated activity may significantly exceed the $DCGL_w$ at specific locations, the overall impact of these smaller areas will not cause the average concentration for the SU to exceed the $DCGL_w$.

Results for all soil samples collected during the Painesville Pre-Remediation VURS effort were compared against calculated DCGLs for the Site. These DCGLs were developed in the *Feasibility Study Addendum* for the Site (USACE 2005a) and are listed in ***Table 11-1*** below.

The SOR formula used with the $DCGL_W$ listed in ***Table 11-1*** is given below. The concentration terms used in the numerators of the SOR $DCGL_w$ equation are the net concentrations after subtraction of the average background concentrations for each radionuclide. RCOC sample results with negative net activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_w$ equation.

$$SOR_{DCGLw} = \frac{Ra-226}{9} + \frac{Th-230}{25} + \frac{Th-232}{6} + \frac{U-234+U-235+U-238}{482}$$

The SOR formula used with the $DCGLs_{emc}$ listed in ***Table 11-1*** is given below. RCOC sample results with negative net activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_{emc}$ equation.

$$SOR_{DCGLemc} = \frac{Ra-226}{12} + \frac{Th-230}{34} + \frac{Th-232}{8} + \frac{U-234+U-235+U-238}{810}$$

RCOC results for all soil samples collected during the Painesville Pre-Remediation VURS effort were compared individually against calculated DCGLs for the Site. DCGLs are based on activity levels greater than background levels. The vast majority of sample results indicated activity levels less than established background levels. When this occurs a negative SOR value is obtained.

Table 11-1 DCGLs for the Painesville FUSRAP Site[a]

RCOC	Background (pCi/g)	$DCGL_w$ (pCi/g)[a, b, c]	$DCGL_{emc}$ (pCi/g)[b, c]
Ra-226[d]	1.42	9	12
Th-230	2.56	25	34
Th-232[e]	1.53	6	8
Total Uranium[f]	5.97	482	810

a These cleanup goals represent activity levels above site background activity corresponding to 25 mrem/yr dose to the critical group receptor. These cleanup goals are equivalent to an incremental lifetime cancer risk of approximately 2E-05 for a construction worker (for each COC).

b if a mixture of radionuclides is present, then the sum of ratios applies per MARSSIM. For example, using $DCGL_w$ values for soil, the following sum of ratios equation is obtained:

$$SOR_{DCGLw} = \frac{Ra-226}{9} + \frac{Th-230}{25} + \frac{Th-232}{6} + \frac{U-234+U-235+U-238}{482}$$

where SOR = sum of the ratios result
Ra-226 = net Ra-226 soil concentrations
Th-230 = net Th-230 soil concentrations
Th-232 = net Th-232 soil concentrations
U-234 = net U-234 soil concentrations
U-235 = net U-235 soil concentrations
U-238 = net U-238 soil concentrations

Net soil concentrations exclude background.

c $DCGL_w$ values developed over a 10,000 m^2 area. $DCGL_{emc}$ values developed over a 100 m^2 area.

d Ra-226 criteria includes Pb-210 contribution to dose.

e Th-232 criteria includes Th-228 and Ra-228 contribution to dose.

f Concentration represent the total uranium guideline.

g Total uranium background is the sum of the background values for U-234, U-235 and U-238.

$DCGL_w$ = Derived Concentration Guideline Levels, Wilcoxon Rank Sum.
$DCGL_{emc}$ = Derived Concentration Guideline Levels, Elevated Measurement Comparison.
FUSRAP = Formerly Utilized Sites Remedial Action Report.
pCi/g = picocuries per gram.
Ra = radium.
RCOC = radiological contaminant of concern
Th = thorium.
U = uranium.

Possible reasons that may explain why the vast majority of RCOC results were found to be at less than established average background values include:

- Established background RCOC activity values are average values for the Site. Actual background activity values will vary across the span of the Site with variations in geological composition and depth. For example, greenish gray clay was prevalent at depth on the western portion of the Site, however; the same clay was rarely encountered on the eastern portion of the Site. Different soil compositions will contain different background activity levels.
- Background RCOC activity values may not have been determined for the soil depths from which the borehole and test pit samples were collected.

SOR $DCGL_w$ and SOR $DCGL_{emc}$ values for all soil samples collected are listed in the Summary Table of Soil Sample Results in Appendix I of this report. No samples were found to exceed an SOR $DCGL_w$ or SOR $DCGL_{emc}$ value of 1.

11.2 Development of Activity Correlation Factors for Field Screening

Field activity correlation factors were unable to be determined while activities were taking place onsite due to the short onsite time (2 weeks) and the length of time required for the offsite laboratory to complete the required analysis. However, activity correlation factors have been developed for future use at the site. Activity correlation factors were developed for DHG measurements, test pit sidewall measurements, and soil surface measurements.

Activity correlation factors were developed by comparing gross gamma measurements in the field, such as DHG measurements, to calculated SOR $DCGL_w$ values for each sample analyzed from the site.

DHG Measurements

Calculated SOR $DCGL_w$ values from 96 offsite sample analysis results were compared to 96 DHG counts collected from 32 soil boring locations. DHG counts were collected using a 3-in. by 3-in. NaI detector and a Ludlum Model 2221 rate meter/scaler. Since the sample intervals covered 12-in. depths compared to the 6-in. measurement intervals for the DHG, the two DHG results for each foot bgs were averaged prior to being compared to the sample data. The results of this comparison are shown in ***Figure 11-1***.

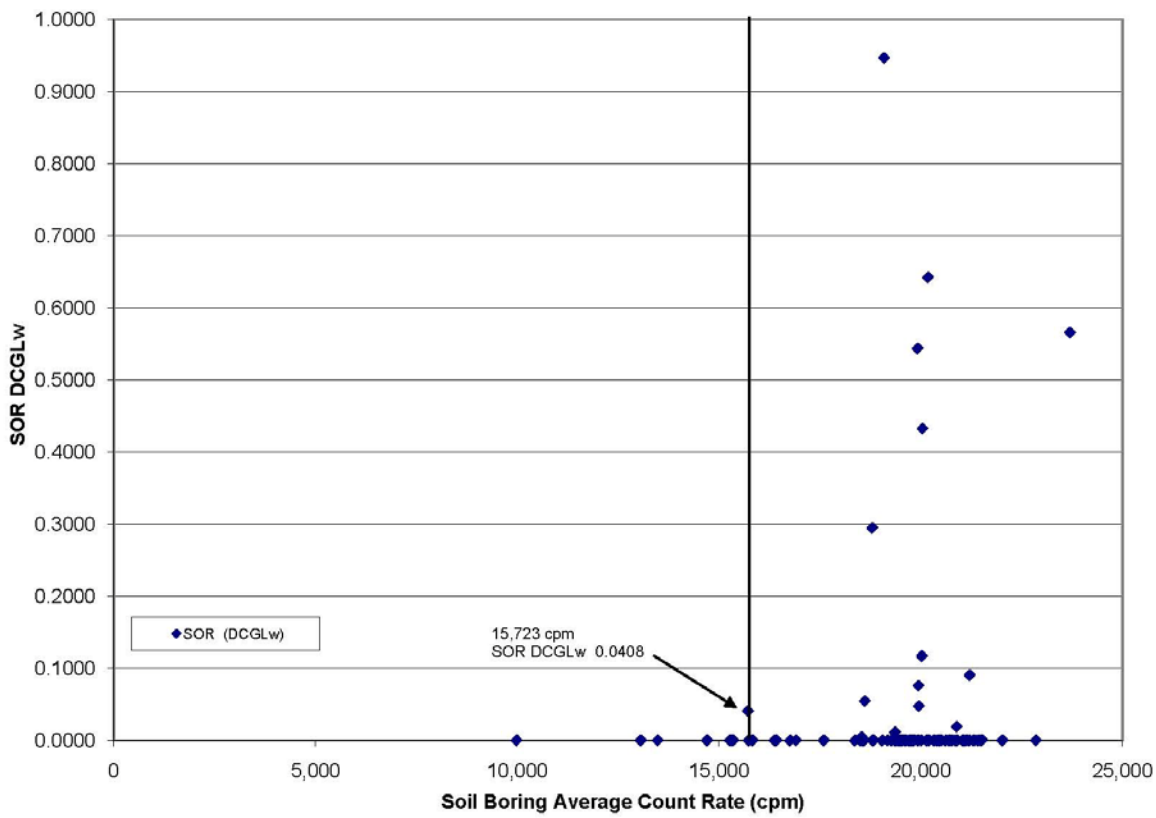

Figure 11-1 Results of Averaged DHG Count Rates versus SOR $DCGL_w$ for Core Samples

A scatter plot of DHG count rates versus SOR $DCGL_w$ values was used to evaluate any possible correlation between DHG count rates and SOR $DCGL_w$ values. The scatter plot is illustrated in Figure 11-1 above. RCOC sample results with negative activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_w$ equation. Boreholes with SOR $DCGL_w$ values greater than zero but less than 1 are listed in ***Table 11-2*** below. A summary table for all boreholes and associated RCOC and SOR $DCGL_w$ values can be found in Appendix I of this report. There were no borehole SOR $DCGL_w$ values greater than 1.

Table 11-2 Information Pertaining to Boreholes with SOR $DCGL_w$ Values Greater than Zero

Borehole I.D.	Depth Interval (feet bgs)	DHG Count Rate (cpm)	SOR $DCGL_w$ value
PNV-SO-SU13-SB001(8.0–9.0)	8.0 –9.0	19,922	0.5435
PNV-SO-SU17-SB002(11.0–12.0)	11.0 –12.0	20,895	0.0190
PNV-SO-SU22-SB001(4.0–5.0)	4.0 –5.0	21,215	0.0906
PNV-SO-SU22-SB006(7.0–8.0)	7.0 –8.0	19,820	0.0748
PNV-SO-SU22-SB007(7.0–8.0)	7.0 –8.0	19,093	0.9466
PNV-SO-SU22-SB007(8.0–9.0)	8.0 –9.0	20,183	0.6422
PNV-SO-SU22-SB007(9.0–10.0)	9.0 –10.0	20,049	0.4322
PNV-SO-SU23-SB001(2.0–3.0)	2.0 –3.0	15,723	0.0408
PNV-SO-SU23-SB001(3.0–4.0)	3.0 –4.0	18,803	0.2948
PNV-SO-SU26-SB003(9.0-10.0)	9.0 –10.0	18,531	0.005
PNV-SO-SU23-SB002(1.5–2.5)	1.5 –2.5	23,702	0.5483
PNV-SO-SU23-SB006(11.0–12.0)	11.0 –12.0	19,365	0.0113

bgs = below ground surface.
cpm = counts per minute
DHG = downhole gamma (logging).
SOR $DCGL_w$ = Sum of Ratios for Derived Concentration Guideline Level, Wilcox Rank Sum.

Evaluation of Figure 11-1 and Table 11-2 indicates that SOR $DCGL_w$ values greater than zero were not encountered until a DHG count rate of 15,723 cpm was obtained. The SOR $DCGL_w$ value associated with this count rate was 0.041. Evaluation of the data does not indicate a mathematical relationship between DHG count rates and associated SOR $DCGL_w$ values; this may be due to the limited number of positive value data points. Based on the data, and being conservative, it is recommended that soil processing and sampling not be performed when DHG count rates are less than 15,723 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that there appears to be no mathematical relationship between DHG count rates and associated SOR $DCGL_w$ values and that SOR $DCGL_w$ values greater than zero were not obtained until a DHG count rate of 15,723 cpm was obtained.

Test Pit Sidewall Measurements

Calculated SOR $DCGL_w$ values from 32 offsite sample analysis results were compared to 32 gross gamma count rates collected from 32 test pit sidewall locations. Gross gamma counts were collected using a collimated 3-in. by 3-in. NaI detector and a Ludlum Model 2221 rate meter/scaler. The results of this comparison are shown in ***Figure 11-2***.

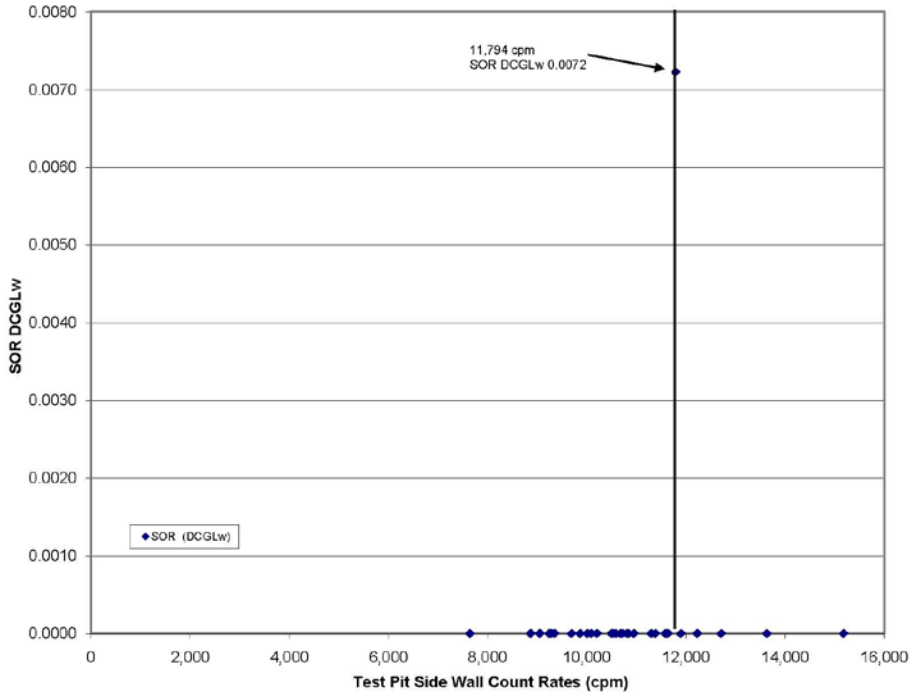

Figure 11-2 Results of Test Pit Sidewall Count Rates Versus SOR $DCGL_w$ for Test Pit Sidewall Samples

A scatter plot of test pit sidewall count rates versus test pit sidewall SOR $DCGL_w$ values was used to evaluate any possible correlation between test pit sidewall count rates and sidewall SOR $DCGL_w$ values. The scatter plot is illustrated in Figure 11-2 above. RCOC sample results with negative activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_w$ equation. Only one test pit sidewall sample had a SOR $DCGL_w$ value greater than zero. Test pit SU18-TP001 had a SOR $DCGL_w$ value of 0.007. The sample was collected from the southwest wall at the 5 ft bgs depth. The corresponding sidewall gross gamma count rate at the sample location was 11,794 cpm. A summary table for all test pit sidewall samples and associated RCOC and SOR $DCGL_w$ values can be found in Appendix I of this report. There were no test pit sidewall SOR $DCGL_w$ values greater than 1.

Evaluation of the data does not indicate a mathematical relationship between test pit sidewall count rates and associated SOR $DCGL_w$ values; this may be due to the limited number of positive value data points. Based on the data, and being conservative, it is recommended that soil processing and sampling not be performed when test pit sidewall count rates are less than 11,794 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that there appears to be no mathematical relationship between test pit sidewall count rates and associated SOR $DCGL_w$ values and that the only test pit sidewall SOR $DCGL_w$ value greater than zero was obtained with a corresponding gross gamma count rate of 11,794 cpm.

Surface Soil Measurements

Calculated SOR $DCGL_w$ values from 15 offsite sample analysis results were compared to 15 gross gamma count rates collected from a biased location on the surface of 15 test pits. Gross gamma counts were collected using a 3-in. by 3-in. NaI detector and a Ludlum Model 2221 rate meter/scaler.

A scatter plot of test pit surface count rates versus SOR $DCGL_w$ values was used to evaluate any possible correlation between surface count rates and surface SOR $DCGL_w$ values. The scatter plot is illustrated in ***Figure 11-3*** (right). RCOC sample results with negative activity values after subtraction of established background values were set to zero for inclusion in the SOR $DCGL_w$ equation. Test pit surface samples with SOR $DCGL_w$ values greater than zero but less than 1 are listed in ***Table 11-3*** below. A summary table for all test pit surface samples and associated RCOC and SOR $DCGL_w$ values can be found in Appendix I of this report. There were no test pit surface sample SOR $DCGL_w$ values greater than 1.

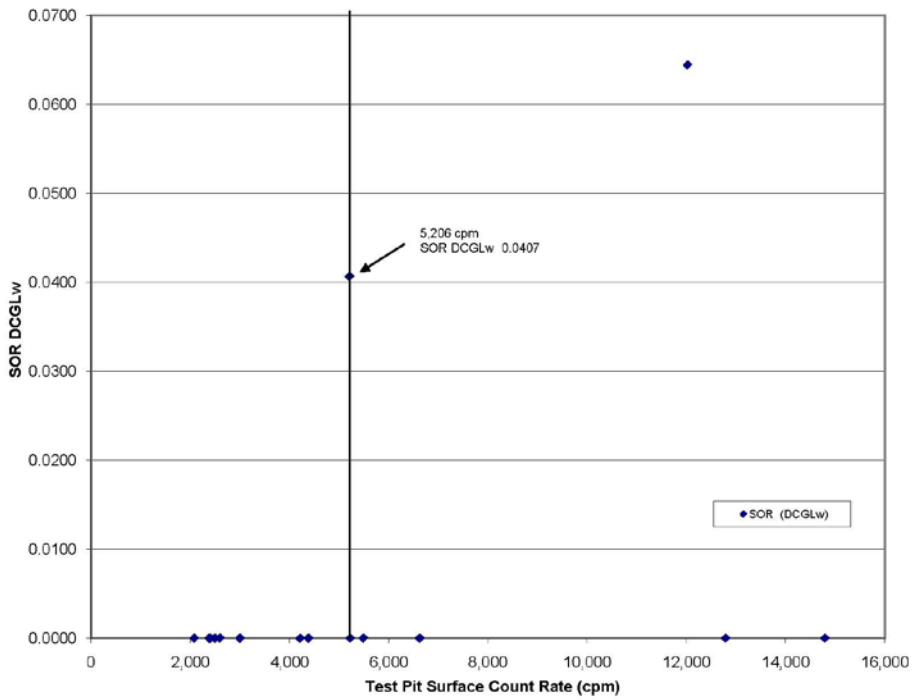

Figure 11-3 Results of Surface Count Rates Versus SOR $DCGL_w$ for Test Pit Surface Samples

Table 11-3 Information Pertaining to Test Pit Surface Samples with SOR $DCGL_w$ Values Greater than Zero

Test Pit I.D.	Sample Location Count Rate (cpm)	SOR $DCGL_w$ value
SU15–TP003	5,206	0.0407
SU20–TP001	12,022	0.0644

cpm = counts per minute.
SU = survey unit
SOR $DCGL_w$ = Sum of Ratios for Derived Concentration Guideline Level, Wilcox Rank Sum.

Evaluation of Figure 11-3 and Table 11-3 indicates that SOR $DCGL_w$ values greater than zero were not encountered until a test pit surface count rate of 5,206 cpm was obtained. The SOR $DCGL_w$ value associated with this count rate was 0.0407. Evaluation of the data does not indicate a mathematical relationship between test pit surface count rates and associated SOR $DCGL_w$ values; this may be due to the limited number of positive value data points. Based on the data, and being conservative, it is recommended that soil processing and sampling not be performed when test pit surface count rates

are less than 5,206 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that there appears to be no mathematical relationship between test pit surface count rates and associated SOR $DCGL_w$ values and that SOR $DCGL_w$ values greater than zero were not obtained until a test pit surface count rate of 5,206 cpm was obtained.

12.0 CONCLUSIONS

Test pit analytical results from the eastern portion of the Site indicated SOR $DCGL_w$ and $DCGL_{emc}$ values of <1, verifying that contamination is not present at depth in the previously final status surveyed Class 2 areas.

Soil boring core analytical results from USACE-specified locations surrounding Areas A and H (previously remediated areas) indicate SOR $DCGL_w$ and $DCGL_{emc}$ values of <1, verifying that contamination did not extend vertically or horizontally past previously identified contamination boundaries.

It is recommended that soil processing and sampling not be performed when DHG count rates are less than 15,723 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that there appears to be no mathematical relationship between DHG count rates and associated SOR $DCGL_w$ values and that SOR $DCGL_w$ values greater than zero were not obtained until a DHG count rate of 15,723 cpm was obtained.

It is recommended that soil processing and sampling not be performed when test pit sidewall count rates are less than 11,794 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that there appears to be no mathematical relationship between test pit sidewall count rates and associated SOR $DCGL_w$ values and that the only test pit sidewall SOR $DCGL_w$ value greater than zero was obtained with a corresponding gross gamma count rate of 11,794 cpm.

It is recommended that soil processing and sampling not be performed when test pit surface count rates are less than 5,206 cpm using a 3-in. by 3-in. NaI detector. The recommendation is based on the fact that there appears to be no mathematical relationship between test pit surface count rates and associated SOR $DCGL_w$ values and that SOR $DCGL_w$ values greater than zero were not obtained until a test pit surface count rate of 5,206 cpm was obtained.

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Appendix A. Site Layout, Borehole and Test Pit Locations

Site Layout Drawing

Borehole and Test Pit Locations

Photographic Log

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Site Layout Drawing

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REPACE THIS PAGE WITH Slip-in Pocket for SITE LAYOUT DRAWING which would count as page A-3

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Borehole and Test Pit Locations

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Coordinates as Installed

Number	Description	Northing	Easting
213	SU1SB001	763802.099	2313063.975
214	SU1SB002	763759.17	2313067.038
362	SU2SB001	763870.168	2313060.324
361	SU2SB002	763850.524	2313065.342
363	SU2SB003	763891.621	2313065.378
341	SU13SB001	763617.044	2313147.337
219	SU13SB002	763761.311	2313228.973
220	SU13SB003	763888.358	2313155.606
221	SU13SB004	764015.462	2313082.273
246	SU17SB001	763412.045	2313010.29
222	SU17SB002	763507.172	2312788.781
223	SU17SB003	763507.197	2312935.552
225	SU17SB004	763507.221	2313082.273
226	SU17SB005	763507.162	2313228.995
335	SU22SB001	764265.306	2312940.597
330	SU22SB002	764263.815	2313084.006
232	SU22SB003	764386.711	2312730.197
332	SU22SB004	764391.712	2312861.917
331	SU22SB005	764392.591	2313008.145
228	SU22SB006	764152.574	2313092.898
227	SU22SB007	764164.249	2313016.546
238	SU23SB001	763991.215	2312884.808
237	SU23SB002	764041.163	2312893.313
236	SU23SB003	764142.549	2312862.191
235	SU23SB004	764264.704	2312789.66
239	SU23SB005	763960.14	2312885.966
240	SU23SB006	763942.625	2312882.28
241	SU25SB001	763616.135	2312811.954
242	SU25SB002	763648.015	2312866.972
243	SU26SB001	763679.789	2312922.047
346	SU26SB002	763631.786	2312954.606
245	SU26SB003	763610.443	2312996.136
281	SU14TP001	764167.251	2313657.594
282	SU14TP001	764166.202	2313648.455
283	SU14TP001	764174.859	2313646.915
284	SU14TP001	764176.017	2313656.18
153	SU14TP002	764261.775	2313422.051
154	SU14TP002	764261.775	2313432.051
155	SU14TP002	764251.775	2313432.051
156	SU14TP002	764251.775	2313422.051

Number	Description	Northing	Easting
157	SU14TP003	764336.258	2313735.364
158	SU14TP003	764336.258	2313745.364
159	SU14TP003	764326.258	2313745.364
160	SU14TP003	764326.258	2313735.364
368	SU15TP001	763978.861	2313527.866
369	SU15TP001	763978.861	2313537.866
370	SU15TP001	763968.861	2313537.866
371	SU15TP001	763968.861	2313527.866
165	SU15TP002	763976.861	2313735.364
166	SU15TP002	763976.861	2313745.364
167	SU15TP002	763966.861	2313745.364
168	SU15TP002	763966.861	2313735.364
372	SU16TP001	764156.56	2313204.618
373	SU16TP001	764156.56	2313214.618
374	SU16TP001	764146.56	2313214.618
375	SU16TP001	764146.56	2313204.618
297	SU16TP002	764154.946	2313324.42
298	SU16TP002	764146.995	2313325.428
299	SU16TP002	764145.299	2313315.945
300	SU16TP002	764154.334	2313315.053
306	SU18TP001	763619.783	2313317.577
307	SU18TP001	763605.361	2313316.659
308	SU18TP001	763604.796	2313333.566
309	SU18TP001	763620.265	2313334.345
302	SU18TP002	763784.181	2313439.271
303	SU18TP002	763784.184	2313452.44
304	SU18TP002	763799.44	2313453.098
305	SU18TP002	763799.698	2313438.583
185	SU19TP001	763617.464	2313527.866
186	SU19TP001	763617.464	2313537.866
187	SU19TP001	763607.464	2313537.866
188	SU19TP001	763607.464	2313527.866
322	SU19TP002	763603.996	2313742.34
323	SU19TP002	763604.015	2313734.235
324	SU19TP002	763616.318	2313734.926
325	SU19TP002	763615.664	2313743.347
376	SU19TP003	763797.162	2313633.615
377	SU19TP003	763797.162	2313643.615
378	SU19TP003	763787.162	2313643.615
379	SU19TP003	763787.162	2313633.615

Number	Description	Northing	Easting
201	SU20TP001	763451.256	2313423.474
202	SU20TP001	763451.256	2313433.474
203	SU20TP001	763441.256	2313433.474
204	SU20TP001	763441.256	2313423.474
205	SU20TP002	763333.053	2313811.488
206	SU20TP002	763333.053	2313821.488
207	SU20TP002	763323.053	2313821.488
208	SU20TP002	763323.053	2313811.488
209	SU21TP001	764376.087	2313644.141
210	SU21TP001	764376.087	2313654.141
211	SU21TP001	764366.087	2313654.141
212	SU21TP001	764366.087	2313644.141
355	SU15TP003	763916.017	2313837.758
356	SU15TP003	763914.889	2313830.845
357	SU15TP003	763940.114	2313831.459
358	SU15TP003	763939.355	2313837.948

Coordinates as Staked

TEST BORES

Raw Desc	Northing	Easting	Elevation
SU1SB001	763802.099	2313063.975	622.58
SU1SB002	763759.17	2313067.038	622.91
SU2SB001	763871.953	2313075.986	623.63
SU2SB002	763853.334	2313073.314	622.42
SU2SB003	763876.803	2313056.143	622.3
SU13SB001	763634.342	2313155.601	623.28
SU13SB002	763761.311	2313228.973	622.8
SU13SB003	763888.358	2313155.606	623.69
SU13SB004	764015.462	2313082.273	624.03
SU17SB001	763434.776	2313008.469	623.49
SU17SB002	763507.172	2312788.781	624.05
SU17SB003	763507.197	2312935.552	623.54
SU17SB004	763507.221	2313082.273	623.13
SU17SB005	763507.162	2313228.995	622.88
SU22SB001	764269.611	2312935.647	623.09
SU22SB002	764269.553	2313082.278	622.89
SU22SB003	764396.683	2312715.459	619.87
SU22SB004	764396.64	2312862.194	620.66
SU22SB005	764396.654	2313008.884	621.76
SU22SB006	764152.574	2313092.898	623.07
SU22SB007	764164.249	2313016.546	622.5
SU23SB001	763991.215	2312884.808	623.45
SU23SB002	764041.163	2312893.313	623.83
SU23SB003	764142.549	2312862.191	625.18
SU23SB004	764264.704	2312789.66	620.93
SU23SB005	763960.14	2312885.966	623.76
SU23SB006	763942.625	2312882.28	623.83
SU25SB001	763616.135	2312811.954	622.94
SU25SB002	763648.015	2312866.972	622.94
SU26SB001	763679.789	2312922.047	622.9
SU26SB002	763636.661	2312954.775	622.96
SU26SB003	763610.443	2312996.136	623.17

TEST PITS

SU14TP001	764173.023	2313633.444	0	
SU14TP001	764163.023	2313633.444	0	
SU14TP001	764163.023	2313643.444	0	
SU14TP001	764173.023	2313643.444	0	
SU14TP001	764168.025	2313638.434	622.96	CENTER
SU14TP002	764251.775	2313422.051	0	
SU14TP002	764261.775	2313432.051	0	
SU14TP002	764261.775	2313422.051	0	
SU14TP002	764256.769	2313427.015	622.47	CENTER
SU14TP002	764251.775	2313432.051	0	
SU14TP003	764336.258	2313745.364	0	
SU14TP003	764336.258	2313735.364	0	
SU14TP003	764326.258	2313745.364	0	
SU14TP003	764326.258	2313735.364	0	
SU14TP003	764331.259	2313740.376	624.04	CENTER
SU15TP001	763966.861	2313527.866	0	
SU15TP001	763971.858	2313532.89	622.72	CENTER

Raw Desc	Northing	Easting	Elevation	
SU15TP001	763976.861	2313527.866	0	
SU15TP001	763976.861	2313537.866	0	
SU15TP001	763966.861	2313537.866	0	
SU15TP002	763976.861	2313735.364	0	
SU15TP002	763971.825	2313740.351	623.03	CENTER
SU15TP002	763976.861	2313745.364	0	
SU15TP002	763966.861	2313745.364	0	
SU15TP002	763966.861	2313735.364	0	
SU15TP003	763940.335	2313836.381	0	
SU15TP003	763920.335	2313836.381	0	
SU15TP003	763930.34	2313833.898	623.05	CENTER
SU15TP003	763920.335	2313831.381	0	
SU15TP003	763940.335	2313831.381	0	
SU16TP001	764146.56	2313216.618	0	
SU16TP001	764151.565	2313221.63	623.26	CENTER
SU16TP001	764156.56	2313226.618	0	
SU16TP001	764146.56	2313226.618	0	
SU16TP001	764156.56	2313216.618	0	
SU16TP002	764156.56	2313434.117	0	
SU16TP002	764146.56	2313434.117	0	
SU16TP002	764151.541	2313429.138	623.12	CENTER
SU16TP002	764156.56	2313424.117	0	
SU16TP002	764146.56	2313424.117	0	
SU18TP001	763607.464	2313320.367	0	
SU18TP001	763617.464	2313320.367	0	
SU18TP001	763612.443	2313325.36	623.26	CENTER
SU18TP001	763607.464	2313330.367	0	
SU18TP001	763617.464	2313330.367	0	
SU18TP002	763787.162	2313434.117	0	
SU18TP002	763797.162	2313434.117	0	
SU18TP002	763787.162	2313424.117	0	
SU18TP002	763792.163	2313429.116	623.09	CENTER
SU18TP002	763797.162	2313424.117	0	
SU19TP001	763617.464	2313537.866	0	
SU19TP001	763612.457	2313532.884	623.18	CENTER
SU19TP001	763607.464	2313537.866	0	
SU19TP001	763617.464	2313527.866	0	
SU19TP001	763607.464	2313527.866	0	
SU19TP002	763607.464	2313735.364	0	
SU19TP002	763607.464	2313745.364	0	
SU19TP002	763617.464	2313745.364	0	
SU19TP002	763617.464	2313735.364	0	
SU19TP002	763612.456	2313740.375	623	
SU19TP003	763797.162	2313631.615	0	
SU19TP003	763792.164	2313636.611	622.79	CENTER
SU19TP003	763787.162	2313631.615	0	
SU19TP003	763787.162	2313641.615	0	
SU19TP003	763797.162	2313641.615	0	
SU20TP001	763446.272	2313428.467	621.95	CENTER
SU20TP001	763441.256	2313433.474	0	
SU20TP001	763451.256	2313433.474	0	
SU20TP001	763451.256	2313423.474	0	
SU20TP001	763441.256	2313423.474	0	
SU20TP002	763323.053	2313811.488	0	
SU20TP002	763328.08	2313816.464	622.83	CENTER
SU20TP002	763333.053	2313811.488	0	

Raw Desc	Northing	Easting	Elevation	
SU20TP002	763333.053	2313821.488	0	
SU20TP002	763323.053	2313821.488	0	
SU21TP001	764376.087	2313654.141	0	
SU21TP001	764371.099	2313649.191	623.54	CENTER
SU21TP001	764376.087	2313644.141	0	
SU21TP001	764366.087	2313644.141	0	
SU21TP001	764366.087	2313654.141	0	
EC	763511.712	2313664.311	623.15	
EC	763501.964	2313639.332	623.09	
EC	763511.19	2313639.137	623.13	
EC	763502.655	2313664.513	623.11	
DRAIN LINE	763302.283	2313009.161	624.96	
DRAIN LINE	763423.393	2313003.682	624.11	
CB	763515.9235	2312997.69	0	
MH	763476.173	2313000.932	0	

Photographic Log

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SU14 TP001 / Randy McCrone /5-17-09 / 2:00 pm
Start of Excavation

SU14 TP001 / Randy McCrone / 5-17-09 / 2:20 pm
View of SU14 TP001 Bench

SU14 TP001 / Randy McCrone /5-17-09 / 4:00 pm
Fully Excavated with Bench

SU14 TP001 / Randy McCrone / 5-17-09 / 4:45 pm
After Backfill

SU14 TP002 / Randy McCrone / 5-18-09 / 9:30am
Prior to Excavation

SU14 TP002 / Randy McCrone / 5-18-09 / 9:40 am
Start of Excavation

SU14 TP002 / Randy McCrone / 5-18-09 / 10:00 am
"Benching" the Test Pit

SU14 TP002/ Randy McCrone /5-18-09 / 11:00 am
Bottom of the Test Pit

SU14 TP003 / Randy McCrone / 5-16-09 / 2:00 pm

SU14 TP003 / Randy McCrone / 5-16-09 / 2:10 pm
Start of Excavation

SU14 TP003 / Randy McCrone / 5-16-09 / 2:30 pm
Start of “Benching” Excavation

SU14 TP003 / Randy McCrone / 5-16-09 / 5:00 pm
After Excavation and Backfill

SU15 TP001/ Randy McCrone /5-17-09 / 2:30 pm
Start of Excavation

SU15-TP001 / Randy McCrone / 5-17-09 / 3:30 pm
Fully Excavated Test Pit

SU15 TP001 / Randy McCrone / 5-17-09 / 4:30 pm
After Excavation and Backfill

SU15 TP002 / Randy McCrone / 5-16-09 10:50 am

SU15 TP002 / Randy McCrone / 5-16-09 / 11:00 am
Start of Excavation

SU15 TP002 / Randy McCrone /5-16-09 / 11:30 am
Test Pit at 4-ft Depth

SU15 TP003 / Randy McCrone / 5-20-09 / 6:00 pm
Start of Excavation

SU16 TP001 / Randy McCrone / 5-18-09 / 3:50 pm
Corner Point of Test Pit Prior to Escavation on Concrete Slab

SU16 TP001 / Randy McCrone / 5-18-09 / 4:00pm
Start of Excavation

SU16 TP001 / Randy McCrone / 5-18-09 / 4:30 pm
Test Pit at 4-ft Depth

SU16 TP 002 / Randy McCrone / 5-18-09 3:00 pm

SU16 TP002 / Randy McCrone / 5-18-09 / 3:00 pm
Start of Excavation

SU16 TP002 / Randy McCrone / 5-18-09 / 3:30 pm
"Benching" the Test Pit

SU16 TP002 / Randy McCrone / 5-18-09 / 4:00 pm
Bottom of the Test Pit

SU18 TP001 / Randy McCrone / 5-19-09 / 6:00 pm

SU18 TP001 / Randy McCrone / 5-19-09 / 6:10 pm
Start of Excavation

SU18 TP001 / Randy McCrone / 5-19-09 / 6:40 pm
Fully Excavated Test Pit

SU18-TP001 / Randy McCrone /5-19-09 / 6:55 pm
Fully Excavated Test Pit

SU18 TP002 / Randy McCrone / 5-20-09 / 11:00 am
Unidentified small diameter pipe at bottom center of the test pit

SU18 TP002 / Randy McCrone /5-20-09 / 11:05 am
Bottom and Side Wall of Test Pit

SU18 TP002 / Randy McCrone / 5-20-09 / 12:30 pm
After Excavation and Backfill

SU19 TP001 / Randy McCrone /start of the dig/ 5-19-09 9:00 am
Start of Excavation

SU19 TP001 / Randy McCrone /5-19-09 / 10:30 am
Fully Excavated Test Pit

SU19 TP002 / Randy McCrone / 5-15-09 / 4:30 pm

SU19 TP 002 / Randy McCrone beginning / 5-15-09 4:45 pm
Start of Excavation

SU19 TP002 / Randy McCrone / 5-15-09 / 5:00 pm
Concrete Wall of Side of Test Pit

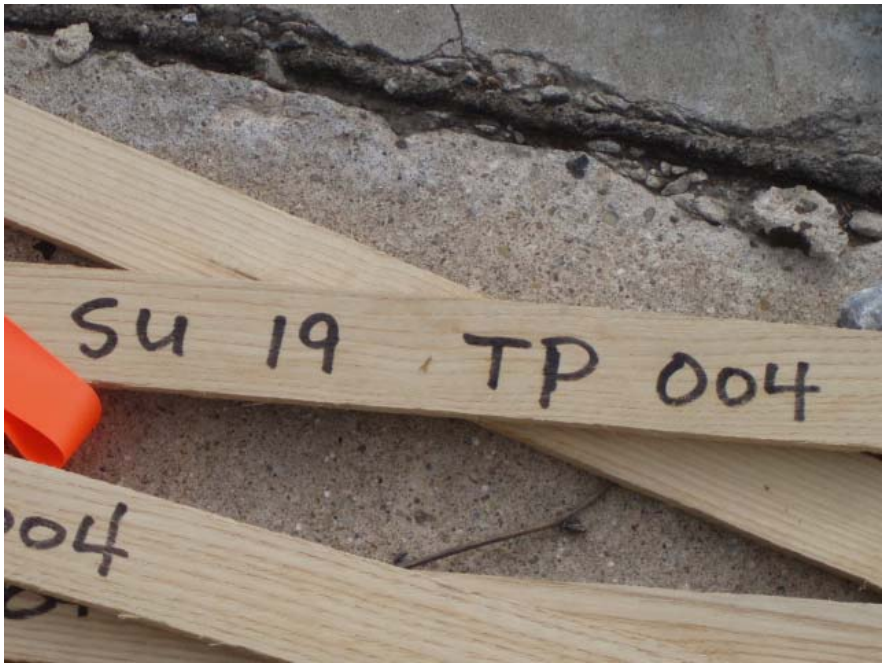
SU19 TP002 / Randy McCrone / 5-15-09 / 5:00 pm
Test Pit at 4-ft bgs

SU19 TP003 / Randy McCrone / 5-17-09 5:30 pm

SU19 TP003 / Randy McCrone start / 5-17-09 5:40 pm
Start of Excavation

SU19 TP003 / Randy McCrone /5-17-09 / 6:00 pm

SU19 TP003 / Randy McCrone / 5-17-09 / 7:00 pm
After Excavation and Backfill



SU19 TP004 / Randy McCrone / 5-19-09 / 11:00am

SU19 TP 004 / Randy McCrone / 5-19-09 / 11:45am Start of Excavation
Test Pit later relocated to SU15 TP003 at the Direction of the COR

SU19 TP004 / Randy McCrone / 5-19-09 / 12:00
Uncovered Drain just below ground surface. Test
Pit later relocated to SU15 TP003 at the Direction
of the COR

SU19 TP004 / Randy McCrone / 5-19-09 / 12:30pm
Concrete slab at approx. 1 ft bgs. Test Pit later relocated to
SU15 TP003 at the Direction of the COR

SU20 TP 001 / Randy McCrone / 5-19-09 / 3:30 pm

SU20 TP 001 / Randy McCrone / 5-19-09 / 3:45 pm
Test Pit at 2 ft bgs

SU20 TP001 / Randy McCrone / 5-19-09 / 3:50 pm
Fill material removed from the Test Pit

SU20 TP001 / Randy McCrone / 5-19-09 / 3:50 pm
Fill material removed from the Test Pit

SU20 TP002 / Randy McCrone dig / 5-15-09 / 12:00pm
Excavating the Test Pit

SU20 TP002 /Randy McCrone / 5-15-09 / 12:30 pm
Excavated Test Pit with Bench

SU20 TP002 / Randy McCrone / 5-15-09 / 12:30 pm
Excavated Test Pit with Bench Showing Uncovered
Small Diameter Pipe

SU21 TP 001 / Randy McCrone / 5-16-09 / 12:00

SU21 TP001 / Randy McCrone /start / 5-16-09 / 12:00
Prior to Excavation

SU21 TP001 / Randy McCrone /5-16-09 / 1:00
Test Pit at 2 ft bgs

Appendix B. Geophysical Location of Conveyance Line Report

June 3, 2009

Mr. Steve Shirley
Director of Federal Programs
ARS International
2609 North River Road
Port Allen, LA 70767

Dear Mr. Shirley:

Subject: Report of Findings - Geophysical Survey
Painesville FUSRAP Site, Painesville, Ohio
CEC Project 090-451

Civil & Environmental Consultants, Inc. (CEC) is pleased to present this letter report of findings to ARS International documenting our recent geophysical survey at the Painesville FUSRAP site in Painesville, Ohio. This geophysical survey was performed for ARSEC, a joint venture of Safety and Ecology Corporation (SEC) and ARS International (ARS) as part of the U.S. Army Corps of Engineers, Buffalo District Scope of Work Authorized under the Formerly Utilized Sites Remedial Action Program (FUSRAP) for the Painesville site dated February 2009.

1.0 BACKGROUND

The geophysical survey was conducted in an attempt to locate a former acid conveyance pipe at the site. The pipe was anticipated to be of clay construction and located at a depth of 10 to 15 feet below grade. The survey area primarily consisted of a triangular shaped asphalt-paved parking lot located north of Fairport Nursery Road. CEC proposed conducting a non-intrusive geophysical survey and alternative frequency induction survey to locate the acid conveyance pipe. The following presents our scope of services and findings.

2.0 GEOPHYSICAL SURVEY

2.1 Ground Penetrating Radar Survey

CEC first attempted to locate and mark the location of the former acid waste conveyance pipe utilizing non-intrusive geophysical methods. Specifically, we utilized ground penetrating radar (GPR) methods.

GPR methods are capable of identifying the void created by the interior of the clay pipe. The depth of penetration is dependent upon the moisture content and clay content of the subsurface. The higher the moisture content and clay content, the shallower the effective depth becomes. For this

investigation we utilized a GSSI 200 mHz GPR unit. This unit has a much lower frequency than typical utility detecting GPR units. This lower-frequency GPR was chosen because the pipe was believed to be located at a depth of 10 to 15 feet below grade and we were informed that the subsurface consisted primarily of clays. The effective depth of the 200 mHz GPR was found to be approximately 20 feet below grade at the site.

2.2 Frequency-Induction Survey

This semi-intrusive method was only recommended if the non-intrusive methods proved ineffectual. This technique required access to at least one end of the pipe. For this survey, a metallic tracer wire was inserted and a traceable frequency was induced to enable a positive response of the pipe location up to 15 feet below grade. The frequency-induction technique requires additional time and resources to insert the tracer wire.

2.3 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) procedures were implemented to check that each of the instruments was operating as designed. During equipment assembly/setup, each cable, connection, and component was inspected for visual signs of wear or damage. Further equipment-specific calibration checks were performed at the start of the survey as per equipment manufacturer specifications. All of the equipment appeared to be operating as designed for the duration of this survey.

3.0 FINDINGS

3.1 Ground Penetrating Radar Survey

As previously stated, the effective depth of the GPR was found to be approximately 20 feet below grade at the site. Several anomalies were identified within the target area that could represent the pipe location. Those anomalies ranged from near 10 feet below grade to 15 feet below grade. However, the area contained so many anomalies that CEC could not identify the pipe location with certainty, therefore the frequency-induction survey was utilized to verify the GPR findings.

3.2 Frequency-Induction Survey

Access to the former acid conveyance pipe was gained from a manhole located within the grassy area to the north of the parking lot. The pipe was found to be located approximately 10 feet below grade at the manhole. Sections of PVC conduit with a tracer wire attached were inserted into the manhole and fed into the former acid conveyance pipe. Additional sections of PVC conduit were added until an adequate distance within the pipe was achieved (approximately 160 feet). A specific frequency

was induced into the wire attached to the conduit and the line was then traced along the ground surface. Specifically, the Radiodetection Cable Avoidance Tool (CAT) and frequency generator were used in unison to locate the tracer wire.

The acid conveyance pipe was found to be oriented north-south ranging from an approximate depth of 10 feet below grade to the north to 13 feet below grade to the south. The location and approximate depths of the pipe were marked on the ground surface using marking paint. The attached Figure 1 depicts the location of the pipe.

4.0 LIMITATIONS

These services were performed in keeping with accepted standards of practice for preparation of geophysical surveys and using CEC's professional judgment. Non-intrusive geophysical surveys are an interpretation of the shallow subsurface made by trained professionals. These interpretations are based upon real electrical, magnetic, or electromagnetic responses; however, those responses can be influenced by variables not apparent at the time of surveys, resulting in false interpretation. No warranties, either expressed or implied, are made herein.

5.0 CLOSING

We appreciate the opportunity to offer our professional services on this project. If you have any questions, please feel free to contact us.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Laura Weir

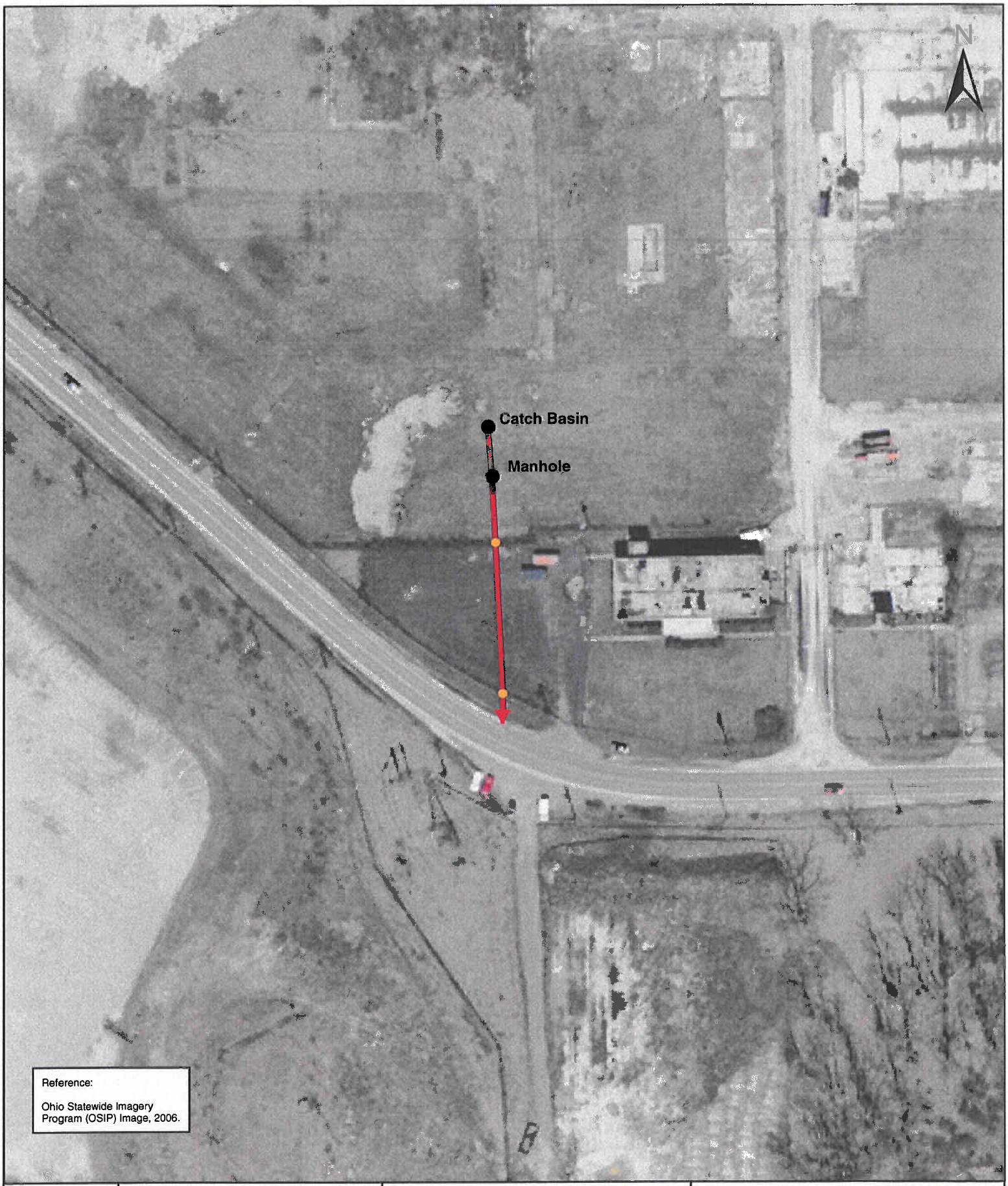
Laura S. Weir
Project Manager

H. Thomas Walsh

H. Thomas Walsh
Senior Project Manager

Enclosure – Figure 1

090-451-R-MAY29-09/P



DRAWN BY: CLC	0 50 100 Feet	ISSUED FOR:	GEOPHYSICAL SURVEY PAINESVILLE FUSRAP SITE PAINESVILLE, OHIO
CHECKED BY: LSW	**Legend** Acid Line Survey Point	ISSUED BY: CEC CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 333 Baldwin Road Pittsburgh, PA 15205-9702 1-800-365-2324 www.cecinc.com	
APPROVED BY:			
SCALE: 1" = 100'			
DATE: 6/3/2009			PROJECT NO.: 090-451 FIGURE: 1

P:\2009\090-451\-GIS\maps\090451_working.mxd - 6/3/2009 @ 9:09:55 AM

Appendix C. Borehole and Core Field Survey Forms

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/19/09	
Time of Activity	1700	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU26-SB003	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location		

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/19/09	5/19/09
Survey Time	1730	1700
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 763610.443

EASTING 2312996.136

Surface static gross gamma counts, before bore hole drilling: 5,030 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/19/09

Signature (Sampler) Date 5/19/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU26-SB003	705002.4465150000	232750.6524240000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	5,030	5,030		
0.5	5,241	8,032		
1.0	7,587	11,080		
1.5	10,085	10,106		
2.0	12,283	10,284		
2.5	15,539	10,841		
3.0	15,992	10,945		
3.5	16,504	10,557		
4.0	17,234	10,684		
4.5	18,424	10,235		
5.0	19,360	10,411		
5.5	20,013	10,418		
6.0	19,802	11,399		
6.5	19,706	11,661		
7.0	19,540	11,065	STANDARD	PNV-SO-SU26-SB003(7.0-8.0) ~~052009~~ 051909
7.5	19,699	11,764		
8.0	19,822	11,372	STANDARD	PNV-SO-SU26-SB003(8.0-9.0) 051909
8.5	20,238	11,607		
9.0	19,605	11,361	STANDARD	PNV-SO-SU26-SB003(9.0-10.0) 051909
9.5	17,456	10,969		
10.0	13,883	10,786		
10.5	15,413	10,887		
11.0	18,675	10,185		
11.5	17,076	11,228		
12.0	18,960	12,435		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/19/09	
Time of Activity	1500	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU26-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704990.02341500000	232756.91798800000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/19/09	5/19/09
Survey Time	1530	1500
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

HIT CONCRETE AT 18". MOVED BOREHOLE FIVE FEET SOUTH.

AS INSTALLED COORDINATES

NORTHING 963631.788

EASTING 2312996.136

Surface static gross gamma counts, before bore hole drilling: 12,362 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/19/09

Signature (Sampler) Date 5/19/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU26-SB002	704990.02341500000	232756.91798800000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	12,362	12,362		
0.5	11,955	11,702		
1.0	12,448	11,114		
1.5	12,604	11,730		
2.0	13,223	11,711		
2.5	16,088	12,360		
3.0	18,782	12,387		
3.5	20,309	12,292		
4.0	20,388	12,277		
4.5	20,466	11,933		
5.0	20,259	11,633		
5.5	20,123	11,019		
6.0	20,029	11,611		
6.5	19,776	11,739		
7.0	19,863	12,248	STANDARD	PNV-SO-SU26-SB002 (7.0-8.0) 051909
7.5	20,025	11,700		
8.0	20,485	12,725	STANDARD	PNV-SO-SU26-SB002 (8.0-9.0) 051909
8.5	20,407	11,531	~~for MS/MSD~~ DUPLICATE	PNV-SO-SU26-SB002 (8.0-9.0) 051909
9.0	20,618	12,493	QA SPLIT	PNV-SO-SU26-SB002 (8.0-9.0) 051909
9.5	20,630	12,294	STANDARD	PNV-SO-SU26-SB002 (9.0-10.0) 051909
10.0	18,511	12,385	~~DUPLICATE~~ for	PNV-SO-SU26-SB002 (9.0-10.0) 051909
10.5	15,849	12,567	MS/MSD	
11.0	16,276	12,092		
11.5	18,302	12,064		
12.0	11,567	12,185		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/19/09	
Time of Activity	1300	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU26-SB001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704980.05792800000	232770.07627000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/19/09	5/19/09
Survey Time	1330	1300
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 763679.789

EASTING 2312922.047

Surface static gross gamma counts, before bore hole drilling: 12,067 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/19/09

Signature (Sampler) Date 5/19/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU26-SB001	704980.057928000000	232770.07027000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	12,067	12,067		
0.5	17,189	11,810		
1.0	15,908	13,218		
1.5	15,016	12,650		
2.0	15,139	11,467		
2.5	18,673	11,426		
3.0	20,837	12,947	STANDARD	PNV-SO-SU26-SB001(3.0-4.0)051909
3.5	21,358	12,246		
4.0	21,636	11,743	STANDARD	PNV-SO-SU26-SB001(4.0-5.0)051909
4.5	21,408	11,792		
5.0	20,995	11,836	STANDARD	PNV-SO-SU26-SB001(5.0-6.0)051909
5.5	21,300	12,863		
6.0	21,235	12,950		
6.5	21,163	12,739		
7.0	21,192	12,419		
7.5	20,815	12,186		
8.0	20,466	12,127		
8.5	20,937	12,180		
9.0	20,560	12,330		
9.5	18,312	12,802		
10.0	14,489	12,939		
10.5	15,220	12,737		
11.0	18,292	13,139		
11.5	15,748	12,688		
12.0	20,222	14,228		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/19/09	
Time of Activity	0900	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU25-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704963.	

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/19/09	5/19/09
Survey Time	0930	0900
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 763648.015

EASTING 2312866.992

Surface static gross gamma counts, before bore hole drilling: 9,991 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/19/09

Signature (Sampler) Date 5/19/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU25-SB002	704963.2665070000	232760.3797590000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	9,991	9,991		
0.5	10,181	10,519		
1.0	10,727	11,610		
1.5	13,693	11,234		
2.0	19,570	11,621		
2.5	20,065	11,727		
3.0	20,016	11,175		
3.5	20,522	11,231		
4.0	20,193	12,653		
4.5	20,108	12,374		
5.0	20,087	12,236		
5.5	20,076	12,404		
6.0	20,713	12,266	STANDARD	PNV-SO-SU25-SB002-(6.0-7.0)051909
6.5	20,201	12,502		
7.0	20,746	10,481	STANDARD	PNV-SO-SU25-SB002-(7.0-8.0)051909
7.5	20,983	10,390	MS/MSD	PNV-SO-SU25-SB002 (7.0-8.0)051909
8.0	20,818	10,198	QA SPLIT	PNV-SO-SU25-SB002 (7.0-8.0)051909
8.5	20,695	10,682	STANDARD	PNV-SO-SU25-SB002 (8.0-9.0)051909
9.0	17,999	11,018	DUPLICATE	PNV-SO-SU25-SB002 (8.0-9.0)051909
9.5	15,186	10,355		
10.0	16,169	10,948		
10.5	18,276	11,104		
11.0	12,795	11,417		
11.5	19,230	11,346		
12.0	20,664	11,578		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/19/09	
Time of Activity	0700	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU25-SB001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704946.48118200000	232750.67080700000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/19/09	5/19/09
Survey Time	0730	0700
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 1636616.135

EASTING 2312811.954

Surface static gross gamma counts, before bore hole drilling: 8,521 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/19/09

Signature (Sampler) Date 5/19/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU25-SB001	704946.481182 00000	232750.670807 00000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	8,521	8,521		
0.5	9,289	8,148		
1.0	11,078	8,763		
1.5	12,518	8,958		
2.0	13,450	8,888		
2.5	16,321	9,484		
3.0	17,058	9,380		
3.5	19,259	9,491		
4.0	20,255	9,926		
4.5	20,242	9,894		
5.0	20,241	9,909	STANDARD	PNV-SO-SU25-SB001(5.0-6.0)051909
5.5	20,567	9,761		
6.0	20,695	10,656	STANDARD	PNV-SO-SU25-SB001(6.0-7.0)051909
6.5	20,882	10,833		
7.0	21,390	10,408	STANDARD	PNV-SO-SU25-SB001(~~6.0~~ 7.0-8.0)051909
7.5	21,462	11,048		
8.0	20,954	10,708		
8.5	20,144	10,512		
9.0	19,497	9,972		
9.5	16,729	10,050		
10.0	13,290	10,232		
10.5	14,398	10,046		
11.0	18,530	9,493		
11.5	15,482	9,130		
12.0	21,408	8,583		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/20/09	
Time of Activity	0730	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU23-SB006	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704972.428669 00000	232849.819346 00000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/20/09	5/20/09
Survey Time	0800	0730
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 763942.625

EASTING 2312882.28

Surface static gross gamma counts, before bore hole drilling: 10,836 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/20/09

Signature (Sampler) Date 5/20/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU23-SB006	704972.428669000000	232849.819346000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,836	10,836		
0.5	10,681	9,997		
1.0	12,914	10,669		
1.5	14,891	10,740		
2.0	18,639	11,051		
2.5	19,687	11,544		
3.0	19,633	12,024		
3.5	19,421	12,302		
4.0	19,321	11,775		
4.5	18,827	12,311		
5.0	19,531	11,775		
5.5	19,272	12,797		
6.0	19,028	12,126		
6.5	18,923	13,129		
7.0	18,291	12,786		
7.5	17,856	12,667		
8.0	17,162	12,262		
8.5	16,522	10,894		
9.0	14,758	10,352	STANDARD	PNV-SO-SU23-SB006 (9.0-10.0) 052009
9.5	12,215	12,117		
10.0	15,371	11,093	STANDARD	PNV-SO-SU23-SB006 (10.0-11.0) 052009
10.5	17,396	10,703		
11.0	16,707	11,469	STANDARD	PNV-SO-SU23-SB006 (11.0-12.0) 052009
11.5	22,022	10,837		
12.0	23,477	11,259		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/20/09	
Time of Activity	0900	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU23-SB005	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704971.403986 00000	232855.512028 00000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/20/09	5/20/09
Survey Time	0930	0900
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 763960.14

EASTING 2312885 966

Surface static gross gamma counts, before bore hole drilling: 10,776 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/20/09

Signature (Sampler) Date 5/20/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU23-SB005	704971.403986 00000	232855.51202800000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,776	10,776		
0.5	11,376	7,557		
1.0	10,462	8,169		
1.5	11,552	8,829		
2.0	14,439	8,325		
2.5	11,764	8,976		
3.0	14,234	9,494		
3.5	17,891	9,256		
4.0	18,803	8,832		
4.5	18,979	8,371		
5.0	19,416	8,776	STANDARD	PNV-SO-SU23-SB005(5.0-6.0) 052009
5.5	19,407	9,780		
6.0	19,345	9,483	STANDARD	PNV-SO-SU23-SB005(6.0-7.0) 052009
6.5	19,454	9,904	DUPLICATE	PNV-SO-SU23-SB005(6.0-7.0) 052009
7.0	18,953	9,662	STANDARD	PNV-SO-SU23-SB005(7.0-8.0) 052009
7.5	18,662	9,427		
8.0	18,786	8,936		
8.5	18,545	9,965		
9.0	17,759	9,494		
9.5	17,860	9,742		
10.0	17,552	9,046		
10.5	15,389	9,822		
11.0	12,613	9,099		
11.5	12,578	9,602		
12.0	10,486	9,432		

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/18/09	
Time of Activity	1315	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU23-SB004	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704939.44270000000	232949.83850000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/18/09	5/18/09
Survey Time	1345	1315
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES
NORTHING 764264.704

EASTING 2312862.191

Surface static gross gamma counts, before bore hole drilling: 9,141 cpm

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/18/09

Signature (Sampler) Date 5/18/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU23-SB004	704939.4427000000	232949.8385000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	9,141	9,141		
0.5	6,804	5,985		
1.0	8,337	6,480		
1.5	8,463	5,945		
2.0	8,450	6,407		
2.5	8,970	6,223		
3.0	10,165	6,581		
3.5	11,862	6,538		
4.0	12,815	7,567		
4.5	13,061	7,488		
5.0	14,401	8,118		
5.5	15,213	8,655		
6.0	15,679	8,620	STANDARD	PNV-SO-SU23-SB004 (6.0-7.0) 051809
6.5	17,171	8,416		
7.0	19,451	8,446	STANDARD	PNV-SO-SU23-SB004 (7.0-8.0) 051809
7.5	20,844	8,171		
8.0	21,685	7,496	STANDARD	PNV-SO-SU23-SB004 (8.0-9.0) 051809
8.5	21,279	7,693		
9.0	20,477	7,384		
9.5	19,765	8,309		
10.0	19,661	8,584		
10.5	18,034	8,830		
11.0	15,695	8,195		
11.5	15,536	8,658		
12.0	13,271	8,306		

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/18/09	
Time of Activity	1800	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU23-SB003	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location		

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/18/09	5/18/09
Survey Time	1830	1800
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 264142.549

EASTING 2312862.191

Surface static gross gamma counts, before bore hole drilling: 10,394 cpm

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/18/09

Signature (Sampler) Date 5/18/09

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2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU23-SB003	704961.80340000000	232911.10870000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,394	10,394		
0.5	6,227	10,162		
1.0	5,075	10,883		
1.5	5,641	12,183		
2.0	10,205	12,130	STANDARD	PNV-SO-SU23-SB003(2.0-3.0)051809
2.5	15,925	11,553		
3.0	18,987	12,005	STANDARD	PNV-SO-SU23-SB003(3.0-4.0) 051809
3.5	20,532	12,346		
4.0	20,033	12,076	STANDARD	PNV-SO-SU23-SB003 (4.0-5.0) 051809
4.5	19,655	15,123		
5.0	19,991	13,631		
5.5	18,727	12,438		
6.0	17,899	12,368		
6.5	17,611	12,083		
7.0	17,995	12,920		
7.5	18,089	12,098		
8.0	19,547	13,986		
8.5	19,842	12,732		
9.0	17,664	12,478		
9.5	14,698	12,898		
10.0	14,873	13,598		
10.5	19,239	13,369		
11.0	15,876	13,907		
11.5	19,962	13,902		
12.0	19,560	13,758		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/20/09	
Time of Activity	1400	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU23-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704971.29526200000	232880.20207400000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/20/09	5/20/09
Survey Time	1430	1400
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES

NORTHING 764041.163

EASTING 2312893.313

Surface static gross gamma counts, before bore hole drilling: 10,793 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/20/09

Signature (Sampler) Date 5/20/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU23-SB002	704971.29526200000	232880.20207400000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,793	10,793		
0.5	12,182	9,400	STANDARD	PNV-SO-SU23-SB002 (0.5-1.5) 052009
1.0	17,237	9,835	DUPLICATE	PNV-SO-SU23-SB002 (0.5-1.5) 052009
1.5	23,140	12,117	STANDARD	PNV-SO-SU23-SB002 (1.5-2.5) 052009
2.0	23,993	13,512	QA SPLIT	PNV-SO-SU23-SB002 (1.5-2.5) 052009
2.5	19,408	12,260	MS/MSD	PNV-SO-SU23-SB002 (1.5-2.5) 052009
3.0	18,695	9,120		
3.5	18,630	10,073	STANDARD	PNV-SO-SU23-SB002 (2.5-3.5) 052009
4.0	18,661	8,864		
4.5	18,318	9,456		
5.0	17,745	9,390		
5.5	17,232	10,908		
6.0	16,460	11,115		
6.5	14,592	9,376		
7.0	14,363	10,098		
7.5	15,638	10,052		
8.0	16,927	10,175		
8.5	17,352	10,283		
9.0	15,681	9,516		
9.5	12,929	9,456		
10.0	14,049	10,081		
10.5	17,639	10,276		
11.0	16,311	9,740		
11.5	19,714	9,634		
12.0	21,768	9,267		

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Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/20/09	
Time of Activity	1100	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU23-SB001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704971.36265800000	232866.04557500000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/20/09	5/20/09
Survey Time	1130	1100
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES
NORTHING 763991.215
EASTING 2312884.808

Surface static gross gamma counts, before bore hole drilling: 10,230 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/20/09

Signature (Sampler) Date 5/20/09

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2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU23-SB001	704971.36265800000	2328166.04557500000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,230	10,230		
0.5	9,095	7,085		
1.0	12,155	9,590		
1.5	13,013	9,252		
2.0	15,226	9,200	STANDARD	PNV-SO-SU23-SB001(2.0-3.0) 052009
2.5	16,220	9,960		
3.0	17,643	9,891	STANDARD	PNV-SO-SU23-SB001(3.0-4.0) 052009
3.5	19,962	9,969		
4.0	23,074	9,430	STANDARD	PNV-SO-SU23-SB001(4.0-5.0) 052009
4.5	22,643	8,345		
5.0	20,088	8,512		
5.5	18,301	9,081		
6.0	18,179	9,611		
6.5	18,583	9,679		
7.0	19,462	10,257		
7.5	19,355	10,061		
8.0	19,125	9,631		
8.5	18,265	11,173		
9.0	17,626	9,417		
9.5	17,585	9,690		
10.0	17,541	9,627		
10.5	15,788	9,140		
11.0	13,267	9,126		
11.5	13,635	9,085		
12.0	15,117	8,997		

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2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/18/09	
Time of Activity	1515	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB007	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705008.85712600000	232917.71510000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/18/09	5/18/09
Survey Time	1545	1515
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES
NORTHING 704164.249

EASTING 2312884.808

Surface static gross gamma counts, before bore hole drilling: 10,431 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/18/09

Signature (Sampler) Date 5/18/09

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2800 Solway Rd
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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU22-SB007	705008.85712600000	232917.71510000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,431	10,431		
0.5	8,290	9,604		
1.0	12,832	11,170		
1.5	13,432	10,877		
2.0	14,597	10,919		
2.5	16,977	11,416		
3.0	20,258	10,859		
3.5	20,314	10,459		
4.0	19,650	10,886		
4.5	19,479	11,028		
5.0	18,091	10,361		
5.5	18,757	10,346		
6.0	18,558	10,127		
6.5	18,745	11,152		
7.0	18,658	11,562	STANDARD	PNV-SO-SU22-SB007 (7.0-8.0) 051809
7.5	19,528	11,530		
8.0	20,061	11,851	STANDARD	PNV-SO-SU22-SB007 (8.0-9.0) 051809
8.5	20,305	11,152		
9.0	20,348	11,461	STANDARD	PNV-SO-SU22-SB007 (9.0-10.0) 051809
9.5	19,750	11,235		
10.0	17,064	11,054		
10.5	13,929	10,742		
11.0	14,629	10,152		
11.5	17,001	10,291		
12.0	12,305	11,073		

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2800 Solway Rd
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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/17/09	
Time of Activity	0900	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB006	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705032.12062500000	232914.18708300000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/17/09	5/17/09
Survey Time	0930	0900
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR 277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments: AS INSTALLED COORDINATES
NORTHING 764152.574
EASTING 2313092.898

Surface static gross gamma counts, before bore hole drilling: 9,791

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/17/09

Signature (Sampler) Date 5/17/09

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2800 Solway Rd
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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SV22-SB006	705032.12062500000	232914.18708300000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	13,923	9,791		
0.5	11,155	9,802		
1.0	12,246	9,618		
1.5	12,112	9,113		
2.0	12,176	9,722		
2.5	12,050			
3.0	15,065			
3.5	15,401			
4.0	16,067		NO RECOVERY FROM 2.5 TO 6.0 FEET	
4.5	17,502			
5.0	18,779			
5.5	19,086			
6.0	19,288			
6.5	19,503	9,904		
7.0	19,855	10,481	STANDARD	PNV-SO-SV22-SB006 (7.0-8.0) 051709
7.5	19,784	11,021	DUPLICATE	PNV-SO-SV22-SB006 (7.0-8.0) 051709
8.0	19,791	11,398	STANDARD	PNV-SO-SV22-SB006 (8.0-9.0) 051709
8.5	19,717	10,971	MS/MSD	PNV-SO-SV22-SB006 (8.0-9.0) 051709
9.0	20,236	10,425	STANDARD	PNV-SO-SV22-SB006 (9.0-10.0) 051709
9.5	20,708	9,933	QA SPLIT	PNV-SO-SV22-SB006 (9.0-10.0) 051709
10.0	18,869	9,872		
10.5	15,528	9,941		
11.0	14,478	10,384		
11.5	17,049	10,499		
12.0	12,869	10,462		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/17/09	
Time of Activity	1700	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB005	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705006.52480000000	232988.56830000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/17/09	5/17/09
Survey Time	1730	1700
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

BOREHOLE WAS TOO CLOSE TO EMBANKMENT.
MOVED TO 5 FEET SOUTH. FOR NEW BOREHOLE.

AS INSTALLED COORDINATES
NORTHING 964392.591
EASTING 2313008.145

Surface static gross gamma counts, before bore hole drilling: 11,144 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/17/09

Signature (Sampler) Date 5/17/09

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2800 Solway Rd
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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU22-SB005	705006.5248 0000000	232988.5683 0000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	11,144	11,144		
0.5	8,303	10,944		
1.0	12,849	12,442		
1.5	13,058	11,511		
2.0	16,354	11,328		
2.5	19,784	11,669		
3.0	20,766	12,039	STANDARD	PNV-SO-SU22-SB005 (3.0-4.0) 051709
3.5	21,052	11,826		
4.0	21,073	10,886	STANDARD	PNV-SO-SU22-SB005 (4.0-5.0) 051709
4.5	20,999	11,252		
5.0	20,707	11,156	STANDARD	PNV-SO-SU22-SB005 (5.0-6.0) 051709
5.5	20,701	11,377		
6.0	19,763	12,082		
6.5	19,534	11,448		
7.0	19,207	11,477		
7.5	19,540	12,257		
8.0	19,922	13,918		
8.5	19,730	12,291		
9.0	18,308	12,562		
9.5	15,182	12,567		
10.0	13,572	12,236		
10.5	15,272	12,203		
11.0	13,604	12,354		
11.5	13,610	12,226		
12.0	20,743	11,178		

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2800 Solway Rd
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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/18/09	
Time of Activity	0700	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB004	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704961.8034 0000000	232988.5683 0000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/18/09	5/18/09
Survey Time	0730	0700
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:
AS INSTALLED COORDINATES
NORTHING 764391.712
EASTING 2312861.917

Surface static gross gamma counts, before bore hole drilling: 10,933

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/18/09

Signature (Sampler) Date 5/18/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU22-SB004	704961.8034 0000000	232988.5683 0000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,933	10,933		
0.5	10,299	12,298		
1.0	13,717	13,076		
1.5	16,241	13,188		
2.0	19,259	12,630		
2.5	20,219	13,800		
3.0	21,106	13,250		
3.5	20,322	14,623		
4.0	20,917	14,260	STANDARD	PNV-SO-SU22-SB004(4.0-5.0)051809
4.5	21,688	14,321		
5.0	21,887	14,063	STANDARD	PNV-SO-SU22-SB004 (5.0-6.0)051809
5.5	22,165	14,108		
6.0	21,397	14,163	STANDARD	PNV-SO-SU22-SB004(6.0-7.0)051809
6.5	21,028	14,676		
7.0	20,662	13,873		
7.5	20,248	14,313		
8.0	18,796	14,619		
8.5	18,366	15,324		
9.0	17,949	14,935		
9.5	17,680	14,730		
10.0	16,469	13,492		
10.5	13,783	14,450		
11.0	14,143	14,031		
11.5	18,494	12,760		
12.0	13,525	13,688		

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2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/18/09	
Time of Activity	0900	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB003	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704917.08200000000	232988.56830000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/18/09	5/18/09
Survey Time	0930	0900
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:
AS INSTALLED COORDINATES
NORTHING 704386.211
EASTING 2312730.197

Surface static gross gamma counts, before bore hole drilling: 9,886 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/18/09

Signature (Sampler) Date 5/18/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU22-SB003	704917.08200000000	232988.56830000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	9,886	9,886		
0.5	11,814	10,195		
1.0	14,493	10,757		
1.5	18,386	11,386		
2.0	18,884	10,489		
2.5	19,632	11,742		
3.0	19,816	11,962	STANDARD	PNV-SO-SU22-SB003(3.0-4.0)051809
3.5	20,082	11,200		
4.0	20,010	10,682	STANDARD	PNV-SO-SU22-SB003(4.0-5.0)051809
4.5	19,608	12,255		
5.0	18,747	12,201	STANDARD	PNV-SO-SU22-SB003(5.0-6.0)051809
5.5	18,277	10,916		
6.0	18,696	11,003		
6.5	17,830	10,861		
7.0	18,069	10,715		
7.5	19,197	12,286		
8.0	20,295	12,640		
8.5	20,479	11,897		
9.0	18,756	12,030		
9.5	14,863	12,455		
10.0	14,300	11,018		
10.5	16,489	11,127		
11.0	9,998	11,524		
11.5	16,068	11,794		
12.0	16,702	11,877		

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2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/17/09	
Time of Activity	1300	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705028.88540000000	232949.83850000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/17/09	5/17/09
Survey Time	1330	1330
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

STOPPED BORE AT 3 FEET DUE TO CONCRETE INTERFERENCE.
MOVED HOLE 5 FEET SOUTH, TO ACCOMODATE BOREHOLE.

AS INSTALLED COORDINATES
NORTHING 764263.815
EASTING 2313084.006

Surface static gross gamma counts, before bore hole drilling: 3,836 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) — Date 5/17/09

Signature (Sampler) — Date 5/17/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU22-SB002	705028.88540000000	232949.83850000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	3,836	3,836		
0.5	3,705	4,739		
1.0	4,494	5,512		
1.5	5,940	6,027		
2.0	5,962	6,056		
2.5	8,592	6,288		
3.0	11,957	6,479		
3.5	15,907	6,690		
4.0	17,550	6,814	STANDARD	PNV-SO-SU22-SB002 (4.0-5.0) 051709
4.5	19,191	6,804	DUPLICATE	PNV-SO-SU22-SB002 (5.0-6.0) 051709
5.0	19,617	7,013	STANDARD	PNV-SO-SU22-SB002 (5.0)-(6.0) 051709
5.5	19,280	5,618	MS/MSD	PNV-SO-SU22-SB002 (6.0-7.0) 051709
6.0	18,644	7,052	QA SPLIT	PNV-SO-SU22-SB002 (6.0-7.0) 051709
6.5	18,966	6,571	STANDARD	PNV-SO-SU22-SB002 (6.0-7.0) 051709
7.0	18,211	7,608		
7.5	18,339	7,634		
8.0	17,766	6,802		
8.5	16,965	6,297		
9.0	16,210	6,345		
9.5	16,760	6,664		
10.0	17,199	7,044		
10.5	16,914	7,185		
11.0	14,646	6,701		
11.5	15,135	6,941		
12.0	14,345	7,096		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/17/09	
Time of Activity	1500	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU22-SB001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	704984.1641000000	232949.8385000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/17/09	5/17/09
Survey Time	1500	1500
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

ENCOUNTERED INTERFERENCE IN A WATER OR SEWER LINE.
MOVED 5 FEET EAST AND 1 FOOT SOUTH FOR BOREHOLE.

AS INSTALLED COORDINATES
NORTHING 764265.306
EASTING 2312940.597

Surface static gross gamma counts, before bore hole drilling: 9,306 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/17/09

Signature (Sampler) Date 5/17/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU22-SB001	704984.1641000000	232949.8385000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	9,306	9,306		
0.5	8,881	6,607		
1.0	10,279	8,040		
1.5	13,805	7,837		
2.0	12,760	7,994		
2.5	15,295	8,732		
3.0	20,552	8,340	STANDARD	PNV-SO-SU22-SB001(3.0-4.0)051709
3.5	22,139	8,087		
4.0	21,780	8,193	STANDARD	PNV-SO-SU22-SB001(4.0-5.0)051709
4.5	20,650	8,574	DUPLICATE	PNV-SO-SU22-SB001(4.0-5.0)051709
5.0	19,866	8,745	STANDARD	PNV-SO-SU22-SB001(5.0-6.0)051709
5.5	19,250	8,895		
6.0	18,873	8,903		
6.5	18,662	7,254		
7.0	19,760	8,182		
7.5	20,659	8,189		
8.0	21,675	8,762		
8.5	21,840	8,560		
9.0	21,789	8,475		
9.5	20,861	8,483		
10.0	18,627	8,501		
10.5	14,509	8,906		
11.0	14,933	8,781		
11.5	18,347	8,502		
12.0	16,882	9,997		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/15/09	
Time of Activity	1500	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU17-SB005	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705073.6068000000	232717.4596000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/15/09	5/15/09
Survey Time	1530	1500
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR 277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments: AS INSTALLED COORDINATES
NORTHING 763507.162
EASTING 2313228.995

Surface static gross gamma counts, before bore hole drilling: 6,334 cpm

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/15/09

Signature (Sampler) Date 5/15/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU17-SB005	705073.6068000000	232717.4596000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	6,334	6,334	STANDARD	
0.5	7,351	5,880		
1.0	8,003	6,512		
1.5	8,237	7,623		
2.0	8,785	6,472		
2.5	9,752	5,893		
3.0	12,187	7,196		
3.5	15,806	7,392		
4.0	16,133	7,128		PNV-SO-SU17-SB005 (4.0-5.0) 51509
4.5	17,400	7,159		
5.0	18,473	6,881		PNV-SO-SU17-SB005 (5.0-6.0) 51509
5.5	19,175	6,500		
6.0	18,806	6,337		PNV-SO-SU17-SB005 (6.0-7.0) 51509
6.5	18,406	7,627		
7.0	18,590	6,992		
7.5	18,753	7,864		
8.0	19,041	8,240		
8.5	18,557	7,023		
9.0	18,191	7,473		
9.5	17,803	7,499		
10.0	17,593	7,792		
10.5	15,984	7,284		
11.0	13,487	7,159		
11.5	13,170	8,358		
12.0	15,351	8,446	STANDARD	

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/15/09	
Time of Activity	1300	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU-17-SB004	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705028.8854000000	232717.4596000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/15/09	5/15/09
Survey Time	1330	1300
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

EXPERIENCED REFUSAL AND CAVE-IN FROM 11.0' TO 12.0'.

AS INSTALLED COORDINATES
NORTHING 763507.221
EASTING 2313082.273

Surface static gross gamma counts, before bore hole drilling: 9,894 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

David J Warren
Signature (Surveyor) Date 5/15/09

Signature (Sampler) Date 5/15/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU17-SB004	705028.88540000000	232717.45960000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	9,894	9,894		
0.5	10,007	10,661		
1.0	9,597	10,694		
1.5	10,195	10,365		
2.0	10,386	10,791		
2.5	11,548	11,457		
3.0	15,469	11,493		
3.5	17,873	11,733		
4.0	18,429	11,310		
4.5	18,348	11,941		
5.0	17,920	11,074		
5.5	18,550	9,887		
6.0	18,947	10,378		
6.5	19,086	10,527		
7.0	19,611	11,347	STANDARD	PNV-SO-SU17-SB004(7.0-8.0)051509
7.5	20,297	10,997	DUPLICATE	PNV-SO-SU17-SB004(7.0-8.0)051509
8.0	20,615	11,542	STANDARD	PNV-SO-SU17-SB004(8.0-9.0)051509
8.5	20,808	11,316	MS/MSD	PNV-SO-SU17-SB004(8.0-9.0)051509
9.0	20,516	11,318	STANDARD	PNV-SO-SU17-SB004(9.0-10.0)051509
9.5	19,805	11,675	QA SPLIT	PNV-SO-SU17-SB004(9.0-10.0)051509
10.0	17,729	12,126		
10.5	15,126	12,381		
11.0	13,711	11,185		
11.5	REFUSAL	12,083		
12.0	REFUSAL	11,465		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/14/09	
Time of Activity	1600	
Surveyor Name	DAVE WARREN	
Sampler Name	DAMON DEVILLE	
Media	SOIL	
Bore Hole and Soil Core Identification	SU17-SB003	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	764984.16410000000	232717.45960000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/14/09	5/14/09
Survey Time	1630	1600
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

EXPERIENCED REFUSAL AND CAVE-IN FROM 11.0 FEET TO 12.0 FEET.

AS INSTALLED COORDINATES
NORTHING 763507.197

EASTING 2312935.552

Surface static gross gamma counts, before bore hole drilling: 6,000 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) — Date 5/14/09

Signature (Sampler) — Date 5/14/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU17-SB003	704984.16410000000	232717.45960000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	6,000	6,000	STANDARD	
0.5	4,632	8,172		
1.0	4,059	8,900		
1.5	5,362	7,950		
2.0	7,871	9,600		
2.5	9,672	7,730		
3.0	6,398	6,907		
3.5	3,142	7,702		
4.0	7,864	8,558		
4.5	14,882	8,658		
5.0	17,740	8,686		
5.5	18,373	8,897		
6.0	18,641	8,497		
6.5	18,746	8,067		
7.0	19,339	7,405		PNV-SO-SU17-SB003(7.0-8.0)051409
7.5	19,914	8,081		
8.0	19,604	7,378		PNV-SO-SU17-SB003(8.0-9.0)051409
8.5	19,137	7,568		
9.0	17,427	7,958		PNV-SO-SU17-SB003(9.0-10.0)051409
9.5	14,063	8,085		
10.0	13,191	7,884		
10.5	14,690	7,890		
11.0	REFUSAL	7,914		
11.5	REFUSAL	8,473		
12.0	REFUSAL	8,300	STANDARD	

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/14/09	
Time of Activity	1300	
Surveyor Name	DAVE WARREN	
Sampler Name	DAMON DEVILLE	
Media	SOIL	
Bore Hole and Soil Core Identification	SU17-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	764939.44270000000	232717.45960000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/14/09	5/14/09
Survey Time	1330	1300
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:
AS INSTALLED COORDINATES
NORTHING 763507.172
EASTING 2312788.781

Surface static gross gamma counts, before bore hole drilling: 8,725 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) — Date 5/14/09

Signature (Sampler) — Date 5/14/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU17-SB002	704939.4427000000	232717.4596000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	8,725	8,725	STANDARD	
0.5	16,353	8,955		
1.0	17,358	9,168		
1.5	17,364	9,720		
2.0	17,096	9,607		
2.5	16,291	9,296		
3.0	16,440	9,294		
3.5	16,575	9,177		
4.0	16,670	9,162		
4.5	16,722	9,425		
5.0	16,616	9,475		
5.5	16,539	9,550		
6.0	16,175	9,650		
6.5	15,823	7,745		
7.0	14,540	7,741		
7.5	13,410	7,656		
8.0	11,594	7,608		
8.5	11,148	7,723		
9.0	11,383	8,222		PNV-SO-SU17-SB002(9.0-10.0)051409
9.5	8,593	8,970		
10.0	18,010	9,233		PNV-SO-SU17-SB002(10.0-11.0)051409
10.5	20,352	8,978		
11.0	21,056	9,374		PNV-SO-SU17-SB002(11.0-12.0)051409
11.5	20,733	9,461		
12.0	20,880	9,505	STANDARD	

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/22/09	
Time of Activity	1800	
Surveyor Name	Dave Warren	
Sampler Name	Dave Warren	
Media	Soil	
Bore Hole and Soil Core Identification	SU17-SB001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705006.38587100000	232695.40509100000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/22/09	5/22/09
Survey Time	1830	1800
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

AS INSTALLED COORDINATES
NORTHING 263412.045
EASTING 2313010.29

Surface static gross gamma counts, before bore hole drilling: 6,790 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

David J Warren
Signature (Surveyor) 05/22/09 Date

David J Warren
Signature (Sampler) 05/22/09 Date

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU17-SB001	705006.38587100000	232695.40509100000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	6790	6790		
0.5	9707	8214		
1.0	12705	7975		
1.5	15567	8141		
2.0	16088	8036		
2.5	16021	8940		
3.0	16898	8959		
3.5	17368	9001		
4.0	17302	8851		
4.5	17969	8353		
5.0	18595	9151		
5.5	18698	9160		
6.0	18818	9267		
6.5	18349	9300		
7.0	18473	8949		
7.5	18851	8399		
8.0	18649	8575		
8.5	18388	9099		
9.0	16861	7973	STANDARD	PNV-SO-SU17-SB001(9.0-10.0) 052209
9.5	13855	8978		
10.0	13849	8477	STANDARD	PNV-SO-SU17-SB001(10.0-11.0) 052209
10.5	17951	8333		
11.0	16186	9953	STANDARD	PNV-SO-SU17-SB001(11.0-12.0) 052209
11.5	21489	9446	DUPLICATE	PNV-SO-SU17-SB001(11.0-12.0) 052209
12.0	22812	9696		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/16/09	
Time of Activity	1500	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU13-SB004	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705028.8854000000000	232872.3789000000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/16/09	5/16/09
Survey Time	1530	1500
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments: AS INSTALLED COORDINATES
NORTHING 864015.462
EASTING 2313082.272

Surface static gross gamma counts, before bore hole drilling: 9,307 cpm

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/16/09

Signature (Sampler) Date 5/16/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	~~705028.3854000000~~ SU13-SB004	705028.8854000000	232872.3789000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	9,307	9,307		
0.5	11,305	9,233		
1.0	12,290	9,894		
1.5	15,223	9,642		
2.0	16,107	9,751		
2.5	16,593	9,982		
3.0	18,427	9,841		
3.5	19,098	9,980		
4.0	18,417	9,898		
4.5	18,566	9,944		
5.0	18,156	10,842		
5.5	18,113	10,389		
6.0	17,885	10,513		
6.5	16,523	10,095		
7.0	16,702	10,127	STANDARD	PNN-SO-SU13-SB004 (7.0-8.0) 051609
7.5	18,499	10,220		
8.0	19,958	10,416	STANDARD	PNN-SO-SU13-SB004 (8.0-9.0) 051609
8.5	19,619	10,439	DUPLICATE	PNN-SO-SU13-SB004 (8.0-9.0) 051609
9.0	18,761	10,424	STANDARD	PNN-SO-SU13-SB004 (9.0-10.0) 051609
9.5	18,468	10,331		
10.0	17,045	10,493		
10.5	14,367	10,461		
11.0	13,866	10,560		
11.5	17,128	10,374		
12.0	9,733	10,562		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/16/09	
Time of Activity	1400	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU13-SB003	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705051.2461000000	232833.6491000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/16/09	5/16/09
Survey Time	1430	1400
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:
AS INSTALLED COORDINATES
NORTHING 763888.358
EASTING 2313155.6006

Surface static gross gamma counts, before bore hole drilling:

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/16/09

Signature (Sampler) Date 5/16/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU13-SB003	705051.2461 0000000	232833.6491 0000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	8,894	8,894		
0.5	10,004	7,885		
1.0	10,642	8,856		
1.5	11,781	9,161		
2.0	15,253	9,536		
2.5	17,053	9,032		
3.0	16,806	9,449		
3.5	17,082	9,381		
4.0	16,959	9,898		
4.5	17,532	10,353		
5.0	18,088	9,855		
5.5	19,168	9,698		
6.0	19,559	9,492		
6.5	19,330	8,958		
7.0	19,501	9,168	STANDARD	PNV-SO-SU13-SB003 (7.0-8.0) 051609
7.5	19,581	9,924	MS/MSD	PNV-SO-SU13-SB003 (7.0-8.0) 051609
8.0	19,595	10,325	STANDARD	PNV-SO-SU13-SB003 (8.0-9.0) 051609
8.5	19,696	10,512	DUPLICATE	PNV-SO-SU13-SB003 (8.0-9.0) 051609
9.0	19,613	10,003	QA SPLIT	PNV-SO-SU13-SB003 (8.0-9.0) 051609
9.5	19,605	10,437	STANDARD	PNV-SO-SU13-SB003 (9.0-10.0) 051609
10.0	19,533	10,661		
10.5	18,094	11,307		
11.0	14,785	10,171		
11.5	14,086	8,547		
12.0	12,036	8,781		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/15/09	
Time of Activity	1830	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU13-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705073.6680000000	232794.9193000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/15/09	5/15/09
Survey Time	1900	1830
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR 277116	PR 277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

THERE WAS AN EMPTY VOID FROM 1.5' TO 6'.
AT THE START OF THE 6'-12' CORE, VISUAL DEBRIS WAS RECOGNIZED.
THERE WAS BRICK, METAL, ETC. AS INSTALLED COORDINATES NORTHING 763961.311 EASTING 2313228.993
EXPERIENCED REFUSAL FROM 11.5 FEET TO 12 FEET.

Surface static gross gamma counts, before bore hole drilling: 7,354 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

David J Warren
Signature (Surveyor) Date 5/15/09

Signature (Sampler) Date 5/15/09

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2800 Solway Rd
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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU13-SB002	705073.60680000000	232794.91930000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	7,354	7,354	STANDARD	
0.5	8,900	8,950		
1.0	10,653	9,633		
1.5	11,628	9,802		
2.0	13,921	VOID		
2.5	13,629	VOID		
3.0	16,510	VOID		
3.5	17,051	VOID		
4.0	17,843	VOID		
4.5	19,442	VOID		
5.0	23,166	VOID		
5.5	23,023	VOID		
6.0	21,306	11,608	STANDARD	PNV-SO-SU13-SB002(6.0-7.0)051509
6.5	20,832	10,373	FIELD DUPLICATE	DUPLICATE OF ABOVE
7.0	20,309	11,007	STANDARD	PNV-SO-SU13-SB002(7.0-8.0)051509
7.5	19,732	11,654	FIELD DUPLICATE	DUPLICATE OF ABOVE
8.0	18,760	10,967	STANDARD	PNV-SO-SU13-SB002(8.0-9.0)051509
8.5	18,378	11,249	FIELD DUPLICATE	DUPLICATE OF ABOVE
9.0	18,419	10,824	STANDARD	
9.5	18,961	11,292		
10.0	17,806	11,609		
10.5	14,768	12,733		
11.0	14,273	12,685		
11.5	16,101	12,004		
12.0	REFUSAL	12,311		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/16/09	
Time of Activity	0930	
Surveyor Name	DAVE WARREN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU13 - SB~~003~~ 001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705051.24610000000	232756.18940000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/16/09	5/16/09
Survey Time	1000	0930
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

HIT CONCRETE AT 3 FEET. ABANDONED BOREHOLE.
MOVED 18 FEET, 5 INCHES SOUTH TO RESTART.

AS INSTALLED COORDINATES
NORTHING - 763619.044
EASTING - 2313147.337

Surface static gross gamma counts, before bore hole drilling: 7,568 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/16/09

Signature (Sampler) Date 5/16/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU13-SB001	705051.2461000000	232756.1894000000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	7568	7568	STANDARD	
0.5	8,467	8,303		
1.0	9,539	8,649		
1.5	10,631	8,722		
2.0	10,297	9,439		
2.5	10,515	8,805		
3.0	10,893	9,093		
3.5	13,736	8,502		
4.0	17,604	8,941		
4.5	17,211	9,548		
5.0	16,659	8,949		
5.5	18,500	8,531		
6.0	19,515	8,382		
6.5	19,784	8,306		
7.0	19,631	9,142		
7.5	19,517	9,997		
8.0	19,869	9,927		PNV-SO-SU13-~~SB003~~ 001 (8.0-9.0) 051609
8.5	19,974	10,287		
9.0	20,461	10,048		PNV-SO-SU13-~~SB003~~ 001 (9.0-10.0) 051609
9.5	20,514	10,178		
10.0	20,499	10,516		PNV-SO-SU13-~~SB003~~ 001 (10.0-11.0) 051609
10.5	19,916	10,491		
11.0	18,010	10,283		
11.5	15,184	10,235		
12.0	14,296	10,114	STANDARD	

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/21/09	
Time of Activity	1530	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU2-SB003	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705020.930323000000	232830.122665000000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/21/09	5/21/09
Survey Time	1600	1530
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116

Comments:

BOREHOLE MOVED 16.5' NORTH AND 7' EAST.

AS INSTALLED COORDINATES
NORTHING 963891.621
EASTING 2313065.398

Surface static gross gamma counts, before bore hole drilling: 7,411 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/21/09

Signature (Sampler) Date 5/21/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU2-SB003	705020.9303230000	232830.1226650000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	7,411	7,411		
0.5	6,021	7,771		
1.0	11,298	9,017		
1.5	13,885	8,240		
2.0	12,938	8,096		
2.5	15,709	7,847		
3.0	19,470	9,261		
3.5	20,016	9,741		
4.0	19,428	8,960		
4.5	19,233	9,035		
5.0	19,370	9,324		
5.5	19,543	9,716		
6.0	19,269	7,903	STANDARD	PNV-SO-SU2-SB003(6.0-7.0)052109
6.5	19,656	7,799		
7.0	19,918	8,268	STANDARD	PNV-SO-SU2-SB003 (7.0-8.0)052109
7.5	20,725	8,907		
8.0	20,500	8,737	STANDARD	PNV-SO-SU2-SB003(8.0-9.0)052109
8.5	20,540	7,985		
9.0	19,964	9,587		
9.5	18,241	8,121		
10.0	16,222	8,693		
10.5	13,649	8,966		
11.0	13,329	9,001		
11.5	16,023	7,992		
12.0	17,064	8,569		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/21/09	
Time of Activity	0715	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU2-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location		

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/21/09	5/21/09
Survey Time	0745	0715
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:
BOREHOLE WAS MOVED 6 FEET WEST AND 1 FOOT SOUTH.
ORIGINAL LOCATION PRODUCED CONCRETE @ 4 FEET.
CORE HAD STRONG SMELL AND FROM 3.5-5 FEET PRODUCED
ELEVATED PID READINGS.
AS INSTALLED COORDINATES NORTHING 763850.524 EASTING 2313065.342
Surface static gross gamma counts, before bore hole drilling: 26,930 CPM (IN BLACKTOP)

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/21/09

Signature (Sampler) Date 5/21/09

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU2-SB002	705026.167591 00000	232822.949885 00000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	26,930	26,930		
0.5	11,538	9,856		
1.0	13,091	8,494		
1.5	13,674	9,164		
2.0	18,344	9,290		
2.5	19,406	9,105		
3.0	19,833	10,011		
3.5	19,392	9,347		
4.0	19,126	8,510		
4.5	18,547	8,691		
5.0	17,871	8,830		
5.5	17,194	9,987		
6.0	17,952	8,890		
6.5	19,547	9,140		
7.0	19,879	9,552		
7.5	20,367	9,042		
8.0	20,424	8,899		
8.5	19,357	8,987		
9.0	17,488	8,563	STANDARD	PNV-SO-SU2-SB002(9.0-10.0)052109
9.5	14,023	8,320		
10.0	14,828	8,047	STANDARD	PNV-SO-SU2-SB002(10.0-11.0)052109
10.5	19,115	7,960		
11.0	17,212	8,199	STANDARD	PNV-SO-SU2-SB002(11.0-12.0)052109
11.5	23,431	8,291		
12.0	24,545	7,275		

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Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/21/09	
Time of Activity	1300	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU25B001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705026.9645660000	232828.6428670000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/21/09	5/21/09
Survey Time	1330	1300
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

HOLE RELOCATED 6'6" WEST AND 6'8" NORTH.

AS INSTALLED COORDINATES
NORTHING 703870.168
EASTING 2313060.324

Surface static gross gamma counts, before bore hole drilling: 4,113 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/21/09

Signature (Sampler) Date 5/21/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU2-SB001	705026.9645660000	232828.6425670000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	4,113	4,113		
0.5	2,210	2,270		
1.0	2,013	5,426		
1.5	2,432	5,884		
2.0	3,729	6,683		
2.5	4,127	6,023		
3.0	3,563	7,533		
3.5	6,710	7,909		
4.0	13,003	7,385		
4.5	17,229	6,405		
5.0	18,862	8,108		
5.5	19,590	7,526		
6.0	20,191	8,975		
6.5	20,102	9,010		
7.0	19,852	8,931		
7.5	19,493	9,425		
8.0	16,968	8,697		
8.5	19,395	8,762		
9.0	17,164	8,041	STANDARD	PNV-SO-SU2-SB001(9.0-10.0)052109
9.5	13,467	7,864		
10.0	13,759	8,571	STANDARD	PNV-SO-SU2-SB001(10.0-11.0)052109
10.5	17,909	8,610	MS/MSD	PNV-SO-SU2-SB001(10.0-11.0)052109
11.0	16,698	9,280	QA SPLIT	PNV-SO-SU2-SB001(11.0-12.0)052109
11.5	21,870	8,688	STANDARD	PNV-SO-SU2-SB001(11.0-12.0)052109
12.0	21,402	8,932	DUPLICATE	PNV-SO-SU2-SB001(11.0-12.0)052109

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/20/09	
Time of Activity	1600	
Surveyor Name	DAVE WARREN	
Sampler Name	DAVE WARREN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU1-SB002	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705024.232079 00000	232794.2587660000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/20/09	5/20/09
Survey Time	1630	1600
Rate Meter Serial No.	190170	190170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments: AS INSTALLED COORDINATES
NORTHING ~~763802.099~~ 763759.17
EASTING ~~2313063.995~~ 2313067.038

Surface static gross gamma counts, before bore hole drilling: 10,318 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/20/09

Signature (Sampler) Date 5/20/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU1-SB002	705024.2320790000	232194.2587660000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	10,318	10,318		
0.5	11,847	10,666		
1.0	12,751	11,500		
1.5	16,476	11,310		
2.0	15,987	11,466		
2.5	14,602	11,006		
3.0	14,583	10,828		
3.5	14,647	12,701		
4.0	15,304	14,130		
4.5	15,708	12,233		
5.0	16,260	11,956		
5.5	17,855	11,909		
6.0	18,863	12,733	STANDARD	PNV-SO-SU1-SB002(6.0-7.0)052009
6.5	19,688	13,600		
7.0	19,714	13,070	STANDARD	PNV-SO-SU1-SB002(7.0-8.0)052009
7.5	19,711	14,272		
8.0	19,950	14,344	STANDARD	PNV-SO-SU1-SB002(8.0-9.0)052009
8.5	19,919	13,202		
9.0	17,227	12,916		
9.5	14,256	12,744		
10.0	15,174	12,508		
10.5	17,498	13,041		
11.0	14,370	12,207		
11.5	19,951	11,986		
12.0	22,390	11,422		

BOREHOLE AND SOIL CORE GAMMA LOG SHEET

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Bore Hole Gamma Logging and Core Gamma Survey
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002		

Site Name	Painesville FUSRAP Site	
Date of Activity	5/20/09	
Time of Activity	1715	
Surveyor Name	PETE FREEMAN	
Sampler Name	PETE FREEMAN	
Media	SOIL	
Bore Hole and Soil Core Identification	SU1-SB001	
	Northing (NAD 1983)	**Easting (NAD 1983)**
Bore Hole Location	705023.32125000000	232807.35193500000

	Gamma Logging	
	Down Hole	**Core**
Survey Date	5/20/09	5/20/09
Survey Time	1745	1715
Rate Meter Serial No.	19170	19170
Detector Serial No.	PR277116	PR277116
Rate Meter Serial No.	N/A	N/A
Detector Serial No.		

Comments:

As installed coordinates: Northing 763802.099, Easting 2313063.975

Surface static gross gamma counts, before bore hole drilling: 11,155 CPM

Bore hole logging performed with ¼ inch x 8 inch diameter iron casing in the bore hole.

Type of Core covering used (circle one): None Plastic bag/sheeting PVC Steel

Signature (Surveyor) Date 5/20/09

Signature (Sampler) Date 5/20/09

ARSEC
2800 Solway Rd
Knoxville TN 37931

Form HPM-3-6-1
BOREHOLE AND SOIL CORE GAMMA LOG

	Bore Hole Identification	Northing (NAD 1983)	Easting (NAD 1983)
Location	~~SU15~~-SB001 SU1	705023.32125000000	232807.35193500000

Depth (Feet)	Down Hole Gamma Reading (cpm)	Core Gamma Reading (cpm)	Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample I.D.
0.0	11,155	11,155		
0.5	12,186	10,714		
1.0	12,950	10,644		
1.5	13,573	10,768		
2.0	14,627	10,991		
2.5	14,950	11,353		
3.0	17,003	12,406		
3.5	18,422	12,764		
4.0	18,752	11,907		
4.5	19,252	10,981		
5.0	19,005	11,443		
5.5	19,264	12,008		
6.0	19,472	11,880	STANDARD	PNV-SO-SU1-SB001(6.0-7.0)052009
6.5	19,548	13,141	MS/MSD	PNV-SO-SU1-SB001(6.0-7.0)052009
7.0	19,662	12,623	STANDARD	PNV-SO-SU1-SB001(7.0-8.0)052009
7.5	19,810	12,731	DUPLICATE	PNV-SO-SU1-SB001(7.0-8.0)052009
8.0	19,788	12,419	QA SPLIT	PNV-SO-SU1-SB001(7.0-8.0)052009
8.5	19,708	12,794	STANDARD	PNV-SO-SU1-SB001(8.0-9.0)052009
9.0	19,506	11,901		
9.5	18,006	10,241		
10.0	13,883	13,159		
10.5	14,210	12,272		
11.0	18,391	12,389		
11.5	16,486	13,044		
12.0	20,330	12,468		

Appendix D. Driller's Soil Boring Logs

CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/20/09**	BORING COMPLETED **05/21/09**	**SU1 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown SAND, some clay and gravel - damp			
2.0							
3.0	1F			(ORIGINAL) Gray brown CLAY (trace silt, trace sand, trace gravel) - damp			
4.0							
5.0							
6.0							
7.0							
8.0							
9.0				Gray brown CLAY (trace sand & gravel) - moist			
10.0	2F			Gray CLAY, some gravel (trace sand) - moist			
11.0				(Becomes wet at 11.0')			▽
12.0							▼
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH		DATE
INITIAL	11.0	▽	5/20/2009
AT COMPLETION	12.2	▼	5/21/2009
OTHER	N/A	▼	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/20/09**	BORING COMPLETED **05/20/09**	**SU1 SB002** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown SAND and GRAVEL, some clay (trace brick) - damp		
2.0						
3.0	1F					
4.0				(ORIGINAL) Brown CLAY, some silt, some gravel (trace sand) - damp		
5.0						
6.0						
7.0						
8.0						
9.0				Brown CLAY, some gravel (trace sand, trace silt) - moist		
10.0	2F					
11.0						
12.0						
13.0				Gray CLAY (trace sand, trace gravel, trace silt) - moist		
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/20/2009
AT COMPLETION	NONE	5/20/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/16/09**	BORING COMPLETED **05/16/09**	**SU13 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown sandy CLAY, some gravel - damp			
2.0							
3.0	1F			(FILL) CONCRETE or RIP RAP			
4.0				(FILL) Brown sandy CLAY, some gravel - damp			
5.0							
6.0				(FILL) Brown SILT, some sand and gravel - damp			
7.0				(FILL) CONCRETE			
8.0				(FILL) Brown SILT, some sand and gravel - damp			
9.0							
10.0	2F			(ORIGINAL) Gray SILT, some clay (trace sand) - moist			
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/16/2009
AT COMPLETION	NONE	5/16/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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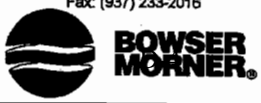

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/16/09**	BORING COMPLETED **05/16/09**	**SU13 SB001A**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
18.5' South of Boring SU13 SB001
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0	1F			(FILL) Brand sandy CLAY, some gravel - damp			
2.0							
3.0				(FILL) CONCRETE			
4.0				Refusal at 3.5' Boring Backfilled with #5 Global Sand Bottom of boring at 3.5 feet			
5.0							
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/16/2009
AT COMPLETION	NONE	5/16/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/15/09**	BORING COMPLETED **05/15/09**	**SU13 SB002**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown gray sandy SILT, some gravel (trace brick trace cobble, trace concrete) with void from 4.0' - 5.5'			
2.0							
3.0	1F						
4.0							
5.0							
6.0				(ORIGINAL) Gray CLAY (trace silt, trace sand and gravel) - damp to moist			
7.0							
8.0							
9.0							
10.0	2F						
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/15/2009
AT COMPLETION	NONE	5/15/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/16/09**	BORING COMPLETED **05/16/09**	**SU13 SB003** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown sandy CLAY, some gravel (trace brick) - damp			
2.0				(ORIGINAL) Brown gray CLAY (trace sand and gravel) - damp			
3.0	1F						
4.0							
5.0				Gray CLAY (trace sand and gravel) - damp			
6.0				Gray brown CLAY (trace sand and gravel) - damp			
7.0							
8.0							
9.0							
10.0	2F						
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/16/2009
AT COMPLETION	NONE	5/16/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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GINT Report Used: NEWLOGIN Report No.: 147596-DEPT22.GPJ GINT Template Used: NEWLOGIN.GDT Date Printed: 06/01/09

CLIENT	JOB NO.	
American Radiation Services	**147596**	
PROJECT	BORING STARTED **05/16/09** / BORING COMPLETED **05/16/09**	**SU13 SB004**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM** / METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**	**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown sandy CLAY, some gravel (trace silt) - damp		
2.0						
3.0	1F			(FILL) Brown SAND and GRAVEL, some clay - damp		
4.0				(ORIGINAL) Gray silty CLAY (trace sand) - damp		
5.0						
6.0						
7.0						
8.0				Brown gray SILT (trace clay, trace sand and gravel) - moist		
9.0						
10.0	2F					
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/16/2009
AT COMPLETION	NONE	5/16/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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GINT Report Used: NEWLOGIN Report No.: 147596-DEPT22.GPJ GINT Template Used: NEWLOGIN.GDT Date Printed: 06/01/09

CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU17 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) ASPHALT		
				(FILL) GRAVEL base - damp		
1.0				(FILL) Brown sandy CLAY, some gravel (trace cobbles) - damp		
2.0				(FILL) Gray CLAY, some gravel (trace sand and cobbles) - damp		
3.0	1F					
4.0						
5.0						
6.0				(ORIGINAL) Gray brown CLAY, some silt, some sand, some gravel - moist		
7.0						
8.0						
9.0						
10.0	2F					
11.0				Gray silty CLAY (trace sand and gravel) - damp		
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/21/2009
AT COMPLETION	NONE	5/21/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/14/09**	BORING COMPLETED **05/14/09**	**SU17 SB002** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown / gray CLAY, some silt (trace sand & gravel) - damp		
2.0						
3.0	1F					
4.0						
5.0						
6.0				(Trace brick at 5.5')		
				(ORIGINAL) Gray CLAY (trace sand & gravel) - moist		
7.0						
8.0						
9.0	2F					
10.0				(Becomes wet at 10.5')		▼
11.0						
12.0				Boring Backfilled with #5 Global Sand Bottom of boring at 12.0 feet		
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	10.5	5/14/2009
AT COMPLETION	10.5	5/14/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/14/09**	BORING COMPLETED **05/14/09**	**SU17 SB003** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Gray / brown CLAY, some silt (trace sand & gravel) - damp		
2.0				(FILL) PEA GRAVEL		
3.0	1F					
4.0				(ORIGINAL) Brown / gray CLAY (trace sand & gravel) - damp		
5.0						
6.0				Gray silty CLAY (trace sand & gravel) - damp		
7.0						
8.0						
9.0						
10.0	2F					
11.0						
12.0						
13.0				Boring Backfilled with #5 Global Sand Bottom of boring at 13.0 feet		
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/14/2009
AT COMPLETION	NONE	5/14/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/15/09**	BORING COMPLETED **05/15/09**	**SU17 SB004** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed

It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(ORIGINAL) Gray brown silty CLAY, some sand (trace gravel) - damp			
2.0							
3.0	1F						
4.0							
5.0							
6.0							
7.0							
8.0							
9.0				Gray silty CLAY (trace sand, trace gravel) - moist			
10.0	2F						
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/15/2009
AT COMPLETION	NONE	5/15/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/15/09**	BORING COMPLETED **05/15/09**	**SU17 SB005** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL, some gravel		
1.0				(FILL) Brown SILT, some sand, some gravel - damp		
2.0						
3.0	1F			(FILL) Brown sandy SILT, some gravel - damp		
4.0				(ORIGINAL) Gray brown SILT, some clay (trace sand and gravel) - damp		
5.0						
6.0				Gray brown SILT, some gravel (trace sand) - damp		
7.0						
8.0						
9.0						
10.0	2F			Gray SILT (trace sand and gravel) - moist		
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/15/2009
AT COMPLETION	NONE	5/15/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU2 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
6' West and 1' South of Boring SU2 SB002
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) ASPHALT			
1.0				(FILL) GRAVEL base			
2.0				(FILL) Gray brown CLAY (trace sand, trace gravel, trace silt) - moist			
3.0	1F						
4.0							
5.0							
6.0				(FILL) Brown SAND and GRAVEL - wet			▽
7.0				(ORIGINAL) Gray brown CLAY, some silt (trace sand and gravel) - moist			
8.0							
9.0							
10.0	2F			Gray CLAY (trace silt, trace sand, trace gravel) - moist			
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	5.5	▽ 5/21/2009
AT COMPLETION	NONE	▼ 5/21/2009
OTHER	N/A	▼ N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU2 SB001A** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown SAND and GRAVEL - damp			
2.0				(FILL) Gray Brown CLAY, some gravel (trace sand) - moist			
3.0	1F						
4.0				(FILL) CONCRETE			
5.0							
6.0				Boring Backfilled with #5 Global Sand Bottom of boring at 6.0 feet			
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/21/2009
AT COMPLETION	NONE	5/21/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/01/51**	**SU2 SB001B** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Crushed STONE			
2.0	1F						
3.0							
4.0							
5.0				Refusal at 4.5'			
				Boring Backfilled with #5 Global Sand			
				Bottom of boring at 4.5 feet			
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/21/2009
AT COMPLETION	NONE	5/1/1951
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU2 SB002** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
4' North of Boring SU1 SB001A

It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) GRAVEL - wet			
2.0							
3.0	1F						
4.0							
5.0				(FILL) Brown CLAY, some gravel (trace sand) - moist			
6.0				(ORIGINAL) Brown CLAY, some sand (trace gravel) - moist			
7.0							
8.0							
9.0							
10.0	2F						
11.0				Gray CLAY (trace silt, trace sand, trace gravel) - damp			
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	0.3	5/21/2009
AT COMPLETION	NONE	5/21/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU2 SB002A**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
6' West of Boring SU1 SB001

It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown SAND and GRAVEL - moist			
2.0	1F						
3.0							
4.0				Refusal on Rubble at 4.0'			
				Boring Backfilled with #5 Global Sand			
				Bottom of boring at 4.0 feet			
5.0							
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/21/2009
AT COMPLETION	NONE	5/21/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU2 SB003**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown SILT, some sand and gravel (trace clay) - damp			
2.0							
3.0	1F						
4.0							
5.0							
6.0				(ORIGINAL) Brown CLAY, some silt, some sand, some gravel - damp			
7.0							
8.0							
9.0				Gray CLAY, some gravel (trace sand, trace silt) - damp			
10.0	2F						
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/21/2009
AT COMPLETION	NONE	5/21/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/21/09**	BORING COMPLETED **05/21/09**	**SU2 SB003A** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) TOPSOIL			
1.0	1F			(FILL) Brown SAND and GRAVEL - damp			
2.0							
3.0				Refusal on Concrete at 3.0'			
				Boring Backfilled with #5 Global Sand			
4.0				Bottom of boring at 3.0 feet			
5.0							
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/21/2009
AT COMPLETION	NONE	5/21/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/17/09**	BORING COMPLETED **05/17/09**	**SU22 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) TOPSOIL			
1.0				(ORIGINAL) gray brown SILT (trace sand and gravel, trace clay) - damp			
2.0							
3.0	1F						
4.0							
5.0							
6.0							
7.0							
8.0							
9.0							
10.0	2F						
11.0							
12.0				Gray silty CLAY (trace sand) - moist			
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/17/2009
AT COMPLETION	NONE	5/17/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/17/09**	BORING COMPLETED **05/17/09**	**SU22 SB002** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
5' South of Boring SU22 SB002
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY / GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE (10 20 30 40 50 60 70 80 90)	REMARKS
			(FILL) TOPSOIL			
1.0			(FILL) Brown SAND and CRUSHED STONE (trace clay) - wet			
2.0			(FILL) Gray SILT (trace clay, trace sand and gravel) - damp			
3.0	1F		(FILL) Brown SILT, some clay (trace sand and gravel) - moist			
4.0						
5.0						
6.0			(ORIGINAL) Brown CLAY, some sand and gravel - moist			
7.0						
8.0						
9.0			Gray SILT (trace sand and gravel, trace clay) - moist			
10.0	2F					
11.0						
12.0						
13.0						
14.0			Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	0.3	5/17/2009
AT COMPLETION	13.5	5/17/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/17/09**	BORING COMPLETED **05/17/09**	**SU22 SB002A**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0	1F			(FILL) Brown SAND and Gravel, some clay - wet		
2.0				(FILL) Gray silty CLAY - moist		
3.0				Refusal at 3.0' Boring Backfilled with #5 Global Sand Bottom of boring at 3.0 feet		
4.0						
5.0						
6.0						
7.0						
8.0						
9.0						
10.0						
11.0						
12.0						
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	0.3	5/17/2009
AT COMPLETION	2.8	5/17/2009
OTHER	1'	1

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/18/09**	BORING COMPLETED **05/18/09**	**SU22 SB003** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed

It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0				(ORIGINAL) Brown Clayey SAND and GRAVEL - damp			
2.0							
3.0	1F						
4.0							
5.0							
6.0							
7.0							
8.0				Gray silty CLAY (trace sand and gravel) - moist			
9.0							
10.0	2F						
11.0							
12.0							
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/18/2009
AT COMPLETION	NONE	5/18/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/18/09**	BORING COMPLETED **05/18/09**	**SU22 SB004**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(ORIGINAL) TOPSOIL		
1.0				Gray brown SILT, some gravel (trace sand) - damp		
2.0						
3.0	1F					
4.0						
5.0						
6.0				Brown gray SILT, some clay (trace sand and gravel) - damp		
				Gray silty CLAY (trace sand and gravel) - moist		
7.0						
8.0						
9.0						
10.0	2F					
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/18/2009
AT COMPLETION	NONE	5/18/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/17/09**	BORING COMPLETED **05/17/09**	**SU22 SB005** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
				(FILL) Gray SILT, some clay - damp			
1.0				(FILL) Brown gray SILT (trace sand and gravel) - damp			
2.0							
3.0	1F						
4.0							
5.0							
6.0				(ORIGINAL) Gray brown silty CLAY (trace sand and gravel) - damp			
7.0							
8.0							
9.0				Gray SILT (trace sand and gravel, trace clay) - damp			
10.0	2F						
11.0							
12.0				Gray silty CLAY, some gravel (trace sand) - moist			
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/17/2009
AT COMPLETION	NONE	5/17/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/17/09**	BORING COMPLETED **05/17/09**	**SU22 SB006** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Very loose brown SAND (trace gravel) - damp		
2.0						
3.0	1F					
4.0						
5.0						
6.0				(ORIGINAL) Gray brown CLAY (trace sand and gravel) - damp		
7.0						
8.0						
9.0						
10.0	2F					
11.0						
12.0				Gray silty CLAY (trace sand) - moist		
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/17/2009
AT COMPLETION	NONE	5/17/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/18/09**	BORING COMPLETED **05/18/09**	**SU22 SB007**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown gray SAND, some crushed stone (trace brick) - moist		
2.0				(FILL) gray brown SILT, some gravel (trace cobbles) - damp		
3.0	1F					
4.0						
5.0				(ORIGINAL) Brown silty CLAY, some sand (trace gravel) - moist		
6.0						
7.0						
8.0						
9.0						
10.0	2F			Gray CLAY, some silt (trace sand and gravel) - damp		
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/18/2009
AT COMPLETION	NONE	5/18/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/20/09**	BORING COMPLETED **05/20/09**	**SU23 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Gray brown sandy CLAY and GRAVEL - damp		
2.0						
3.0	1F			(ORIGINAL) Gray brown CLAY, some sand and gravel - damp		
4.0						
5.0						
6.0				Brown CLAY, some sand and gravel - moist		
7.0						
8.0				Gray CLAY, some silt (trace gravel and sand) - damp		
9.0						
10.0	2F					
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/20/2009
AT COMPLETION	NONE	5/20/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.	
American Radiation Services	**147596**	
PROJECT	BORING STARTED **05/20/09** / BORING COMPLETED **05/20/09**	**SU23 SB002**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM** / METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**	**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
				(FILL) ASPHALT		
1.0				(FILL) Brown clayey SAND and GRAVEL - damp		
2.0						
3.0	1F					
4.0				(ORIGINAL) Brown CLAY, some sand and gravel - moist		
5.0						
6.0				Brown gray silty CLAY (trace sand and gravel) - moist		
7.0						
8.0						
9.0						
10.0	2F					
11.0						
12.0						
13.0				Gray CLAY (trace silt, trace sand, trace gravel) - moist		
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/20/2009
AT COMPLETION	NONE	5/20/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/18/09**	BORING COMPLETED **05/18/09**	**SU23 SB003** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY / GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
			(FILL) TOPSOIL		
1.0			(FILL) Gray SAND and GRAVEL - damp		
2.0			(FILL) Brown SAND and GRAVEL (trace cobbles and silt) - damp		
3.0	1F				
4.0			(ORIGINAL) Brown CLAY, some silt, some sand, some gravel - damp		
5.0					
6.0			Brown sandy CLAY, some gravel (trace silt) - moist		
7.0			Brown CLAY (trace silt, trace sand and gravel) - damp		
8.0					
9.0					
10.0	2F				
11.0					
12.0			Gray silty CLAY (trace sand and gravel) - damp		
13.0			Gray SILT (trace sand and gravel) - moist		
14.0			Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0					
16.0					
17.0					
18.0					
19.0					
20.0					
21.0					
22.0					

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/18/2009
AT COMPLETION	NONE	5/18/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/18/09**	BORING COMPLETED **05/18/09**	**SU23 SB004**
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	Boring No.
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(ORIGINAL) TOPSOIL		
1.0				Brown SAND and GRAVEL, some clay - damp		
2.0						
3.0	1F					
4.0				Brown sandy CLAY, some gravel - moist		
5.0						
6.0						
7.0						
8.0						
9.0						
10.0	2F			Gray CLAY, some silt (trace gravel) - damp		
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/18/2009
AT COMPLETION	NONE	5/18/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

Bowser-Morner, Inc.
4518 Taylorsville Rd.
Dayton, OH 45424
Telephone: (937) 236-8805
Fax: (937) 233-2016
BOWSER MORNER®

GINT Report Used: NEWLOGIN Report No.: 147596-DEPT22.GPJ GINT Template Used: NEWLOGIN.GDT Date Printed: 06/01/09

CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/20/09**	BORING COMPLETED **05/20/09**	**SU23 SB005** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed

It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY / GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
			(FILL) TOPSOIL		
1.0			(FILL) Brown silty SAND and GRAVEL (trace clay) - damp		
2.0					
3.0	1F		(FILL) Gray brown SILT, some sand and gravel - damp		
4.0					
5.0			(ORIGINAL) Brown CLAY, some gravel (trace sand) - damp		
6.0					
7.0					
8.0			Gray CLAY, some sand, some gravel - moist		
9.0					
10.0	2F				
11.0					
12.0					
13.0					
14.0			Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0					
16.0					
17.0					
18.0					
19.0					
20.0					
21.0					
22.0					

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/20/2009
AT COMPLETION	NONE	5/20/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/20/09**	BORING COMPLETED **05/20/09**	**SU23 SB006** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown clayey SAND and GRAVEL - damp		
2.0						
3.0	1F			(ORIGINAL) Gray brown silty CLAY, some sand and gravel - damp		
4.0						
5.0						
6.0						
7.0						
8.0				Gray CLAY, some silt (trace sand, trace gravel) - moist		
9.0						
10.0	2F					
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/20/2009
AT COMPLETION	NONE	5/20/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/19/09**	BORING COMPLETED **05/19/09**	**SU25 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) TOPSOIL			
1.0				(ORIGINAL) Brown CLAY, some sand and gravel - damp to moist			
2.0							
3.0	1F						
4.0							
5.0							
6.0				Brown CLAY, some silt (trace sand and gravel) - damp			
7.0							
8.0							
9.0							
10.0	2F						
11.0							
12.0				Brown sandy CLAY, some gravel (trace silt) - wet			▼
13.0							
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH		DATE
INITIAL	12.0	▽	5/19/2009
AT COMPLETION	12.0	▼	5/19/2009
OTHER	N/A	▼	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/19/09**	BORING COMPLETED **05/19/09**	**SU25 SB002** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) gray brown sandy CLAY, some gravel (trace silt) - damp		
2.0						
3.0	1F			(FILL) Gray SILT (trace sand and gravel) - damp		
4.0				(ORIGINAL) Gray brown sandy CLAY, some gravel - damp		
5.0				Gray SILT, some clay (trace sand and gravel) - damp		
6.0						
7.0				Brown sandy CLAY, some gravel - moist		
8.0				Brown gray SILT, some clay, some sand, some gravel - damp		
9.0				Brown sandy CLAY, some gravel - moist		
10.0	2F			Gray SILT (trace clay, trace sand, trace gravel) - moist		
11.0				Gray CLAY, some silt, some sand, some gravel - wet		∇
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	11.0 ∇	5/19/2009
AT COMPLETION	NONE ∇	5/19/2009
OTHER	N/A ∇	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/19/09**	BORING COMPLETED **05/19/09**	**SU26 SB001** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown SILT, some sand and gravel - damp		
2.0				(ORIGINAL) Gray brown SILT, trace gravel - damp		
3.0	1F					
4.0						
5.0						
6.0				Brown SAND and GRAVEL, some clay - damp		
7.0				Gray brown CLAY, some sand and gravel - damp		
8.0						
9.0						
10.0	2F					
11.0				Gray SILT (trace clay, trace sand, trace gravel) - damp		
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/19/2009
AT COMPLETION	NONE	5/19/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/19/09**	BORING COMPLETED **05/19/09**	**SU26 SB002** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
5' Sout of Boring SU26 SB002
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	N VALUE	REMARKS
				(FILL) TOPSOIL			
1.0				(FILL) Brown silty CLAY, some gravel (trace sand) - damp			
2.0				(Concrete rubble at 2.0')			
3.0	1F			(FILL) Brown sandy CLAY, some gravel (trace silt) - damp			
4.0							
5.0							
6.0							
7.0							
8.0							
9.0							
10.0	2F			(ORIGINAL) Gray brown CLAY (trace sand, trace gravel, trace silt) - damp			
11.0							
12.0							
13.0				Gray CLAY, some silt, (trace sand, trace gravel) - moist			
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet			
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/19/2009
AT COMPLETION	NONE	5/19/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/19/09**	BORING COMPLETED **05/19/09**	**SU26 SB002A** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	COMMENTS / N VALUE, blows/ft. (10 20 30 40 50 60 70 80 90)	REMARKS
				(FILL) TOPSOIL			
1.0	1F			(FILL) FILL MATERIALS			
2.0				Refusal at 1.5'			
				Boring Backfilled with #5 Global Sand			
				Bottom of boring at 1.5 feet			
3.0							
4.0							
5.0							
6.0							
7.0							
8.0							
9.0							
10.0							
11.0							
12.0							
13.0							
14.0							
15.0							
16.0							
17.0							
18.0							
19.0							
20.0							
21.0							
22.0							

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/19/2009
AT COMPLETION	NONE	5/19/2009
OTHER	N/A	N/A

A—SPLIT SPOON
B—ROCK CORE
C—SHELBY TUBE
D—SOIL PROBE
E—AUGER CUTTINGS
F—SONIC

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CLIENT	JOB NO.		
American Radiation Services	**147596**		
PROJECT	BORING STARTED **05/19/09**	BORING COMPLETED **05/19/09**	**SU26 SB003** Boring No.
FUSRAP Site, Painesville, Ohio	DRILLER **BK, RP, CM**	METHOD **8X6 SONIC**	
	TYPED BY **sjr**		**Sheet 1 of 1**

PROJECT LOCATION
LAT. LONG.
SURFACE ELEVATION
BORING LOCATION
As Directed
It has been necessary to interpolate between samples. Therefore, the contacts between the various soil strata should not be taken as absolute.

COMMENTS

N VALUE, blows/ft. ◇ 10 20 30 40 50 60 70 80 90

DEPTH	SAMPLE NO.	SAMPLER TYPE / RECOVERY	GRAPHIC LOG	VISUAL CLASSIFICATION OF THE MATERIAL	BLOW COUNTS	REMARKS
				(FILL) TOPSOIL		
1.0				(FILL) Brown SAND (trace gravel) - damp		
2.0				(FILL) Brown SAND, some clay and gravel (trace asphalt) - damp		
3.0	1F			(FILL) Gray brown CLAY (trace sand and gravel) - damp		
4.0						
5.0				(ORIGINAL) Gray brown CLAY, some silt (trace sand, trace gravel) - damp		
6.0						
7.0						
8.0						
9.0				Gray CLAY (trace silt, trace sand, trace gravel) - damp		
10.0	2F					
11.0						
12.0						
13.0						
14.0				Boring Backfilled with #5 Global Sand Bottom of boring at 14.0 feet		
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						
21.0						
22.0						

WATER LEVEL MEASUREMENTS

	DEPTH	DATE
INITIAL	NONE	5/19/2009
AT COMPLETION	NONE	5/19/2009
OTHER	N/A	N/A

A — SPLIT SPOON
B — ROCK CORE
C — SHELBY TUBE
D — SOIL PROBE
E — AUGER CUTTINGS
F — SONIC

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Appendix E. Borehole Geological Data

Soil Boring Geological Core Logs

Geological Log Book

Soil Boring Geological Core Logs

ARSEC	Soil Boring SU1SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/20/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/20/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763802.099	Geologist	Penny Baxter
	Easting Coord.	2313063.975	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.5 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.58	Sampling Equipment	SS bowl, spoons, spatula

SU1SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-1.0 ft: ROOT MAT	
1-		FL	1.0-1.7 ft: FILL; loose gravel	Core gamma @ 1.0 ft 10,644cpm DHG @ 1.0 ft 12,950cpm
2-		CL	1.7-10.0 ft: CLAY; silty, moist, very hard, medium plasticity, 10YR5/2 grayish brown	
3-				Core gamma @ 3.0 ft 12,406cpm DHG @ 3.0 ft 17,003cpm
4-				
5-				
6-				Core gamma @ 6.0 ft 11,880cpm DHG @ 6.0 ft 19,472cpm PNV-SO-SU1-SB001(6.0-7.0ft) PNV-SO-SU1-SB001(6.0-7.0ft) MS/MSD
7-				Core gamma @ 7.0 ft 12,623cpm DHG @ 7.0 ft 19,662cpm PNV-SO-SU1-SB001(7.0-8.0ft) PNV-SO-SU1-SB001(7.0-8.0ft) DUP PNV-SO-SU1-SB001(7.0-8.0ft) SPLIT
8-				
9-				Core gamma @ 8.0 ft 12,419cpm DHG @ 8.0 ft 19,788cpm PNV-SO-SU1-SB001(8.0-9.0ft)
10-		CL	10.0-13.5 ft: CLAY; dry, hard, highly plastic, GLEY1-3/1 very dark greenish gray	
11-				Core gamma @ 11.0ft 12,389cpm DHG @ 11.0 ft 18,391cpm
12-				
13-				
14-			Bottom of Boring @ 13.5 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU1SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/20/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/20/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763759.170	Geologist	Penny Baxter
	Easting Coord.	2313067.038	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.91	Sampling Equipment	SS bowl, spoons, spatula

SU1SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.4 ft: ROOT MAT;	
1-		FL	0.4-1.3 ft: FILL; loose gravel	
2-		CL	1.3-5.5 ft: CLAY; slightly moist, hard, low plasticity, 10YR4/6 dark yellowish brown mottled with 7.5YR2.5/1 black, core exhibited horizontal platy fractures across its length	Core gamma @ 2.0 ft 11,466cpm DHG @ 6.0 ft 15,987cpm
3-				
4-				
5-				
6-		CL	5.5-11.3 ft: CLAY; moist, hard, medium plasticity, 10YR4/3 brown	Core gamma @ 6.0 ft 12,733cpm DHG @ 6.0 ft 18,863cpm PNV-SO-SU1-SB001(6.0-7.0ft)
7-				Core gamma @ 6.0 ft 13,070CPM DHG @ 6.0 ft 19,714cpm PNV-SO-SU1-SB001(7.0-8.0ft)
8-				Core gamma @ 6.0 ft 14,344cpm DHG @ 6.0 ft 19,950cpm PNV-SO-SU1-SB001(8.0-9.0ft)
9-				
10-				Core gamma @ 10.0 ft 12,508cpm DHG @ 6.0 ft 15,174cpm
11-		CL	11.3-13.0 ft: CLAY; moist, hard, highly plastic, GLEY1-3/1 dark greenish gray	
12-				
13-			Bottom of Boring @ 13.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU2SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/21/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/21/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763850.524	Geologist	Penny Baxter
	Easting Coord.	2313065.342	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.1 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.63	Sampling Equipment	SS bowl, spoons, spatula

SU2SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-6.0 ft: FILL; loose gravel to clay and gravel mix	Note: Hole relocated 6.5ft west and 6.7ft north due to interference from surface concrete pads.
1-				
2-				
3-				Core gamma @ 3.0 ft 7.533cpm DHG @ 3.0 ft 3,563cpm
4-				
5-				
6-		CP	6.0-6.5 ft: CONCRETE PLUG;	
		CL	6.5-12.0 ft: CLAY; moist, hard, medium plasticity, 10YR4/3 brown	
7-				Core gamma @ 7.0 ft 8.931cpm DHG @ 19,852cpm
8-				
9-				
				Core gamma @9.0 ft 8,041cpm DHG @ 17,164cpm PNV-SO-SU2-SB001(9.0-10.0ft)
10-				Core gamma @ 10.0 ft 8.571cpm DHG @ 10.0 ft 13,679cpm PNV-SO-SU2-SB001(10-11.0ft) PNV-SO-SU2-SB001(10-11.0ft)MS/MSD
11-				Core gamma @ 11.0 ft 9,280cpm DHG @11.5 ft 21,870cpm
12-		CL	12.0-13.1 ft: CLAY; dry, hard, medium plasticity, GLEY1-3/1 very dark greenish gray	PNV-SO-SU2-SB001(11.0-12.0ft) PNV-SO-SU2-SB001(11.0-12.0ft)SPLIT
13-			Bottom of Boring @ 13.1 ft bgs	PNV-SO-SU2-SB001(11.0-12.0ft) DUP
14-			NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading	

ARSEC	Soil Boring SU2SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/21/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/21/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763850.524	Geologist	Penny Baxter
	Easting Coord.	2313065.342	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.5 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.42	Sampling Equipment	SS bowl, spoons, spatula

SU2SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-1.6 ft: FILL; loose fine gravel and asphalt	Note: Borehole was moved 6 ft west and 1 ft south. Original location produced concrete at 4ft
1-				**Strong acrid chemical smell in core at 1.6-3.9ft**
2-		CL	1.6-3.9 ft: CLAY; dry, very hard, low plasticity, 10YR4/4 dark yellowish brown **Note:** strong acrid chemical smell noticed and was present downhole to approximately 9.0 ft	
3-				VOC 11.85ppm, CO 20ppm, O_2 19.9ppm @ 3.6 ft
4-		CL	3.9-5.5 ft: CLAY; wet, soft, low plasticity, 2.5Y4/3 olive brown	
5-				VOC 80+ppm, CO 17ppm @ 5.0 ft
6-		CL	5.5-9.4 ft: CLAY; dry, very hard, low plasticity, 2.5Y5/4 light olive brown	
7-				VOC 101ppm, CO 24ppm, H_2S 2ppm @ 7.0 ft
8-				
9-				Core gamma @ 9.0 ft 8.563cpm DHG @ 9.0 ft 17,488cpm PNV-SO-SU2-SB002(9.0-10.0ft)
		CL	9.4-12.5 ft: CLAY; slightly moist, medium plasticity, GLEY1-4/1 dark greenish gray **Note:** strong odor not present in this interval	
10-				Core gamma @ 10.0 ft 8,047cpm DHG @ 10.0 ft 14,828cpm PNV-SO-SU2-SB002(10.0-11.0ft)
11-				Core gamma @ 11.5ft 8,291cpm DHG @ 11.5 ft 23,431cpm PNV-SO-SU2-SB002(11.0-12.0ft)
12-				
13-			Bottom of Boring @ 12.5 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU2SB003		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/21/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/21/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763891.621	Geologist	Penny Baxter
	Easting Coord.	2313065.378	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.9 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.3	Sampling Equipment	SS bowl, spoons, spatula

SU2SB003 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-0.8 ft: FILL; gravel and sand	Note: Borehole moved 16.5 ft north and 7.0 ft east to avoid surface obstructions - concrete pads, rebar, etc.
1-		CL	0.8-6.0 ft: CLAY; silty, slightly moist, very hard, medium plasticity, 10YR5/8 yellowish brown, this section of core breaks horizontally into platy sections	
2-				Core gamma @ 2.0 ft 8,096cpm DHG @ 2.0 ft 12,938cpm
3-				
4-				
5-				
6-				Core gamma @ 6.0ft 7,903cpm DHG @ 6.0 ft 19,269cpm PNV-SO-SU2-SB003(6.0-7.0ft)
		CL	6.0-10.3 ft: CLAY; moist, very hard, high plasticity, 10YR4/3 brown	
7-				Core gamma @ 7.0ft 8,268cpm DHG @ 7.5 ft 20,725cpm PNV-SO-SU2-SB003(7.0-8.0ft)
8-				Core gamma @ 8.0ft 8,737cpm DHG @ 20,500cpm PNV-SO-SU2-SB003(8.0-9.0ft)
9-				
10-				
		CL	10.3-13.9 ft: CLAY; dry, hard, highly plastic, GLEY1-3/1 very dark greenish gray	
11-				Core gamma @ 11.0 ft 9,001cpm DHG @ 11.0 ft 13,329cpm
12-				
13-				
14-			Bottom of Boring @ 13.9 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU13SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/16/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/16/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763617.044	Geologist	Penny Baxter
	Easting Coord.	2313147.337	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.28	Sampling Equipment	SS bowl, spoons, spatula

SU13SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.4ft: ROOT MAT; mixed with surface fill	Refusal at 3 ft, skidded rig 18.5 ft south Core gamma @0.0 ft 7568cpm
1-		FL	0.4-1.9ft: FILL; consisting of gravel, undistinguished soil, brick pieces, clay. Overall color is 10YR4/3 brown	
2-		ML	1.9-3.2ft: SILT; sandy with coarse pebbles(10mm), likely fill material	Core gamma @ 2.0 ft 9,439cpm DHG @ 2.0ft 10,297cpm
3-		CP	3.2-3.5ft: CONCRETE; solid plug, color is GLEY1-6/1 gray	
4-		FL	3.5-6.3ft: FILL; with compacted clay and medium gravel. Color is 7.5YR4/4 brown	Core gamma @ 4.0 ft 8,941cpm DHG @4.0 ft 17,604cpm
5-				
6-				Core gamma @ 6.0 ft 8,382cpm DHG @ 6.0 ft 19,575cpm
		CP	6.3-7.0ft: CONCRETE PLUG. Color is GLEY1-4/1 dark greenish gray	
7-		CL	7.0-10.7ft: CLAY; damp, hard, high plasticity,10YR4/4 dark yellowish brown	
8-				Core gamma @8.0ft 9,927cpm DHG @ 8.0ft 19,869cpm PNV-SO-SU13-SB001(8.0-9.0ft)
9-				Core gamma @ 9.0ft 10,048cpm DHG @ 9.0ft 20,461cpm PNV-SO-SU13-SB001(9.0-10.0ft)
10-				Core gamma @10.0ft 10,516cpm DHG @ 10.0ft 20,499cpm PNV-SO-SU13-SB001(10.0-11.0ft)
11-		CL	10.7-14.0ft: CLAY; damp, hard, medium plasticity, GLEY1-3/1 very dark greenish gray	
12-				
13-				
14-			Bottom of Boring @ 14.0 ft	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading. (4) RM refers to root mat.

ARSEC	Soil Boring SU13SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/15/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/15/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763761.311	Geologist	Penny Baxter
	Easting Coord.	2313228.973	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.8	Sampling Equipment	SS bowl, spoons, spatula

SU13SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-4.0ft: FILL; loose consisting of fine to large cobbles, broken brick and broken concrete. NOTE: poor recovery (around 1.5 ft of material)	NOTE: Driller used 20 bags sand to backfill hole (usual is 10 bags) due to void at 4.0 ft and loose fill to 4.0 ft Core gamma @ 1.0ft 9,633cpm DHG @ 1.0ft 10,653cpm
1-				
2-				
3-				
4-		NR	4.0-5.0 ft: NO RECOVERY; per driller, bit dropped between 4.0-5.0ft indicating a subsurface void	
5-		CL	5.0-11.4 ft: CLAY; with silt, moist, hard, high plasticity, 7.5YR4/6 strong brown	
6-				Core gamma @ 6.0 ft 10,373cpm DHG @ 6.0 ft 20,832cpm PNV-SO-SU13-SB002(6.0-7.0ft) PNV-SO-SU13-SB002(6.0-7.0ft) DUP
7-				Core gamma @7.0ft 11,007cpm DHG @ 7.0ft 20,309cpm PNV-SO-SU13-SB002(7.0-8.0ft) PNV-SO-SU13-SB002(7.0-8.0ft) DUP
8-				Core gamma @ 8.0ft 10,967cpm DHG @8.0 ft 18.760cpm PNV-SO-SU13-SB002(8.0-9.0ft) PNV-SO-SU13-SB002(8.0-9.0ft) DUP
9-				
10-				Core gamma @10.0ft 11,609cpm DHG @10.0ft 17,806cpm
11-				
12-		CL	11.4-13.0 ft: CLAY; moist, hard, high plasticity, GLEY1-3/1 very dark greenish gray	
13-			Bottom of Boring @ 13.0 ft	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU13SB003		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/16/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/16/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763888.358	Geologist	Penny Baxter
	Easting Coord.	2313155.606	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.69	Sampling Equipment	SS bowl, spoons, spatula

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Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-3.2 ft: FILL; loose clay with some fine gravel and brick pieces, color is dark brown	
1-				Core gamma @ 1.0 ft 8,856cpm DHG @ 1.0 ft 10,642cpm
2-				
3-				Core gamma @ 3.0 ft 9,449cpm DHG @ 3.0 ft 16,806cpm
		CL	3.2-4.7 ft: CLAY; moist, hard, high plasticity, 2.5Y3/1 very dark gray	
4-				
		CL	4.7-7.3 ft: CLAY; damp, hard, medium plasticity, 2.5Y4/3 olive brown	
5-				Core gamma @5.0 ft 9,855cpm DHG @ 5.0 ft 18,088cpm
6-				
7-				Core gamma @7.0 ft 9,168cpm DHG @ 7.0 ft 19,501cpm PNV-SO-SU13-SB003(7.0-8.0ft) PNV-SO-SU13-SB003(7.0-8.0ft) MS/MSD
		CL	7.3-13.2 ft: CLAY; silty, damp, hard, high plasticity, 2.5Y4/3 olive brown	
8-				Core gamma @ 8.0ft 10,325cpm DHG @ 8.0 ft 19,595cpm PNV-SO-SU13-SB003(8.0-9.0ft) PNV-SO-SU13-SB003(8.0-9.0ft) DUP PNV-SO-SU13-SB003(8.0-9.0ft) SPLIT
9-				
10-				Core gamma @9.0 ft 10,003cpm DHG @ 9.0 ft 19,613cpm PNV-SO-SU13-SB003(9.0-10.0ft)
11-				Core gamma @11.0 ft 10,171cpm DHG @ 11.0 ft 14,785cpm
12-				
13-				
14-		CL	13.2-14.0 ft: CLAY; damp, hard, medium plasticity, GLEY2-4/1 dark bluish gray	
			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU13SB004		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/16/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/16/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764015.462	Geologist	Penny Baxter
	Easting Coord.	2313082.273	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	624.03	Sampling Equipment	SS bowl, spoons, spatula

SU13SB004 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.4 ft: ROOT MAT; and surface soil	
1-		CL	0.4-2.8 ft: CLAY; silty, slightly damp, hard, non-plastic, 2.5Y4/3 olive brown	Core gamma @1.0ft 9,894cpm DHG @ 1.0 ft 12,290cpm
2-				
3-		FL	2.8-4.1 ft: FILL; loose soil and angular gravel	Core gamma @3.0ft 9,841cpm DHG @ 3.0ft 18,427cpm
4-				
5-		CL	4.1-5.4 ft: CLAY; slightly damp, hard, non-plastic, 5Y3/2 dark olive gray	Core gamma @ 5.0ft 10,842cpm DHG @ 5.0ft 18,156cpm
6-		CL	5.4-6.3 ft: CLAY; silt and small gravel pieces, dry, hard, non-plastic, 2.5Y3/3 dark olive brown mottled with 2.5Y5/6 light olive brown	
7-		CL	6.3-9.1 ft: CLAY; dry, very hard, non-plastic, 2.5Y4/3 olive brown Note: This interval is very hard to cut with a knife and very stiff.	Core gamma @7.0ft 10,127cpm DHG @ 7.0ft 16,702cpm PNV-SO-SU13-SB004(7.0-8.0ft)
8-				Core gamma @ 8.0ft 10,416cpm DHG @ 8.0ft 19,958cpm PNV-SO-SU13-SB004(8.0-9.0ft) PNV-SO-SU13-SB004(8.0-9.0ft) DUP
9-				
10-		CL	9.1-14.0 ft: CLAY; with 1% rounded dark rock (10mm), slightly damp, hard, 5Y4/4 olive mottled with dark gray	Core gamma @ 9.0ft 10,424cpm DHG @ 9.0ft 18,761cpm PNV-SO-SU13-SB004(9.0-10.0ft)
11-				
12-				
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU17SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/22/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/22/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763412.045	Geologist	Penny Baxter
	Easting Coord.	2313010.290	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.2 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.49	Sampling Equipment	SS bowl, spoons, spatula

SU17SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-			0.0-0.2 ft: ASPHALT; asphalt plug from parking lot	Note: Boring was moved from original location inside fenced area to outside fence in parking lot to avoid elec lines
		FL	0.2-1.9 ft: FILL; loose, mix of sand and fine gravel	
1-				
2-		CL	1.9-5.6 ft: CLAY; moist, hard, high plasticity, 2.5Y4/3 olive brown	
3-				Core gamma @ 3.0 ft 8,959cpm DHG @ 3.0 ft 16,898cpm
4-				
5-				
		CL	5.6-9.7 ft: CLAY; silty, slightly moist, hard, medium plasticity, 10YR5/3 light olive brown, Note: core broke into horizontal fractures	
6-				Core gamma @ 6.0 ft 9,267cpm DHG @ 6.0 ft 18,818cpm
7-				
8-				
9-				Core gamma @ 9.0 ft 7,973cpm DHG @ 9.0 ft 16,861cpm PNV-SO-SU17-SB001(9.0-10.0ft)
		CL	9.7-12.3 ft: CLAY; moist, firm, highly plastic, 10YR5/4 yellowish brown	Core gamma @ 10.0 ft 8,477cpm DHG @ 10.0 ft 13,849cpm PNV-SO-SU17-SB001(10.0-11.0ft)
10-				
11-				Core gamma @ 11.0 ft 9,953cpm DHG @ 11.5 ft 21,489cpm PNV-SO-SU17-SB001(11.0-12.0ft) PNV-SO-SU17-SB001(11.0-12.0ft) DUP
12-				
		CL	12.3-14.2 ft: CLAY; dry, very hard, highly plastic, GLEY1-3/1 very dark greenish gray	
13-				
14-			Bottom of Boring @ 14.2 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU17SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/14/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/14/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763507.172	Geologist	Penny Baxter
	Easting Coord.	2312788.781	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	624.05	Sampling Equipment	SS bowl, spoons, spatula

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Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.6 ft: ROOT MAT; with clay	
1-		CL	0.6-6.0 ft: CLAY; dry, firm, non-plastic, 5Y3/1 very dark gray mottled with 2.5Y5/6 light olive brown	Core gamma @ 1.0 ft 9,607cpm DHG @ 1.0 ft 17,096cpm
2-				
3-				
4-				Core gamma @ 4.0 ft 9,162cpm DHG @ 4.0 ft 16,670cpm
5-				
6-		CL	6.0-9.9 ft: CLAY; with trace of 20mm fine angular pebbles, moist, hard, low plasticity, firm, 10YR3/1 dark reddish gray mottled with 2.5Y5/6 light olive brown	
7-				Core gamma @ 7.0ft 7,741cpm DHG @ 7.0 ft 14,540cpm
8-				
9-				Core gamma @ 9.0 ft 8,222cpm DHG @ 9.0 ft 11,383cpm PNV-SO-SU17-SB002(9.0-10.0ft)
10-		CL	9.9-10.0 ft: CLAY; with 5% soft, friable shale (5mm), moist, firm, low plasticity	Core gamma @ 10.0 ft 9,233cpm DHG @ 10.0 ft 18,010cpm PNV-SO-SU17-SB002(10.0-11.0ft)
		CL	10.0-10.8 ft: CLAY; with 20% sand and pebble mix,, moist, firm, non-plastic, 10YR3/1 dark reddish gray	
11-		CL	10.8-12.0 ft: CLAY; with 10% angular pebbles, moist, firm, low plasticity, 10R3/1 dark reddish gray mottled with 2.5Y5/6 light olive brown	Core gamma @ 11.0 ft 9,374cpm DHG @ 11.0 ft 21,056cpm PNV-SO-SU17-SB002(11.0-12.0ft)
12-				
13-			Bottom of Boring @ 12.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU17SB003		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/14/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/14/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763507.197	Geologist	Penny Baxter
	Easting Coord.	2312935.552	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.54	Sampling Equipment	SS bowl, spoons, spatula

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Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-1.5 ft: CLAY; with fine sand, dry, firm, non-plastic, 7.5YR4/3 brown	Core gamma @ 0.0 ft 8172cpm
1-				
2-		FL	1.5-3.4 ft: FILL; rounded quartz grains pea gravel size, well sorted from fine (2 mm) to very coarse (>10mm), loose individual grains, trace silt	Core gamma @ 2.0 ft 9600cpm DHG @ 2.0 ft 7,871cpm
3-				
4-		CL	3.4-5.8 ft: CLAY; with fine silt, moist, firm, low plasticity, 2.5Y4/3 olive brown	Core gamma @ 4.0 ft 8558cpm
5-				
		NR	5.8-6.0 ft: NO RECOVERY	
6-		CL	6.0-7.7 ft: same description as 3.4-5.8 ft	
7-				Core gamma @ 7.0 ft 7,405cpm DHG @7.0 ft 19,339cpm PNV-SO-SU17-SB003(7.0-8.0ft)
8-		CL	7.7-9.2 ft: CLAY; with fine silt, moist, firm, low plasticity, 2.5Y4/3 olive brown Note: perched water at 7.7 ft	Core gamma @ 8.0 ft 7,378cpm DHG @ 8.0 ft 19,604cpm PNV-SO-SU17-SB003(8.0-9.0ft)
9-		CL	9.2-13.0 ft: CLAY; moist, firm, high plasticity, 10YR3/1 very dark gray	Core gamma @ 9.0 ft 7,958cpm DHG @9.0ft 17,427cpm PNV-SO-SU17-SB003(9.0-10.0ft)
10-				
11-				Core gamma @11.0 ft 7914cpm Cave in to 11.0 ft post-coring prevented DHG to 12.0 ft
12-				
13-			Bottom of Boring @ 13.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU17SB004		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/15/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/15/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763507.221	Geologist	Penny Baxter
	Easting Coord.	2313082.273	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.13	Sampling Equipment	SS bowl, spoons, spatula

SU17SB004 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		CL	0.0-0.5 ft: CLAY; silty, dry, firm, low plasticity, 5YR3/3 dark reddish brown	Core gamma @ 0.0 ft 9894cpm DHG @ 0.0 ft 9894cpm
1-		FL	0.5-1.1ft: FILL; sand and silt, loose, fine, dry, contains 40% rounded pebbles (15mm), 5YR4/3 reddish brown	
		CL	1.1-3.8 ft: CLAY; with silt, dry, very hard, non-plastic, 10YR5/6 yellowish brown	
2-				Core gamma @ 2.0 ft 10,791cpm DHG @ 2.0 ft 10,386cpm
3-				
		ML	3.8-5.5 ft: SILT; with clay, dry, very hard, non-plastic, 10YR4/3 brown	
4-				Core gamma @ 4.0 ft 11,310cpm DHG @4.0 ft 18,429
5-				
		NR	5.5-6.0 ft: NO RECOVERY	
6-		ML	6.0-9.2 ft: same as 3.8-5.5ft interval	Core gamma @ 6.5 ft 10,527cpm DHG @ 6.5 ft 10,086cpm
7-				Core gamma @7.0 ft 10,997cpm DHG @7.0 ft 20,297cpm PNV-SO-SU17-SB004 (7.0-8.0ft) PNV-SO-SU17-SB004 (7.0-8.0ft) DUP
8-				Core gamma @8.0 ft 11,542cpm DHG @8.0 ft 20,615cpm PNV-SO-SU17-SB004(8.0-9.0ft) PNV-SO-SU17-SB004(8.0-9.0ft) MS/MSD
9-				
		CL	9.2-12.0 ft: CLAY; with silt, dry, very hard, high plasticity, GLEY2-5/1 bluish gray	Core gamma @ 9.0 ft 11,318cpm DHG @9.0 ft 20,516cpm PNV-SO-SU17-SB004(9.0-10.0ft) PNV-SO-SU17-SB004(9.0-10.0ft) SPLIT
10-				
11-				Core gamma @ 11.0 ft 11,185cpm DHG @ 11.0 ft 13,711cpm
12-				
13-			Bottom of Boring @ 12.0 ft bgs	**NOTES:** (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading
14-				

ARSEC	Soil Boring SU17SB005		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/15/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/15/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763507.162	Geologist	Penny Baxter
	Easting Coord.	2313228.995	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.88	Sampling Equipment	SS bowl, spoons, spatula

SU17SB005 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.4 ft: ROOT MAT; with loose dry top soil mixed with 15mm flat gravel	
1-		CL	0.4-1.7 ft: CLAY; silty, dry, very hard, non-plastic, 10YR5/4 yellowish brown	Core gamma @1.0 ft 6,512cpm DHG @ 1.0 ft 8.003cpm
2-		MT	1.7-2.1ft: SILT; with clay, dry, hard, non-plastic, 10YR5/4 yellowish brown	
3-		CL	2.1-3.2 ft: CLAY; with silt, damp to moist, soft, low plasticity, 10YR4/4 dark yellowish brown	
4-		CL	3.2-7.5 ft: CLAY; silty, dry, hard, low plasticity, 10YR5/6 yellowish brown	Core gamma @ 4.0 ft 7,128cpm DHG @ 4.0 ft 16,133cpm PNV-SO-SU17SB005(4.0-5.0ft)
5-				Core gamma @ 5.0 ft 6,881cpm DHG @ 5.0 ft 18,473cpm PNV-SO-SU17SB005(5.0-6.0ft)
6-				Core gamma @ 6.0 ft 6,337cpm DHG @ 6.0 ft 18,806cpm PNV-SO-SU17SB005(6.0-7.0ft)
7-				
8-		CL	7.5-10.3 ft: CLAY; damp, firm, low plasticity, 10YR4/4 dark yellowish brown	
9-				
10-				
11-		CL	10.3-11.0 ft: CLAY; moist, hard, low plasticity, 10YR5/4 yellowish brown	Core gamma @ 11.0 ft 7,159cpm DHG @ 11.0 ft 13,487cpm
12-		CL	11.0-12.0 ft: CLAY; some silt, slightly moist, very hard, medium plasticity, GLEY2-5/1 greenish gray	
13-			Bottom of Boring @ 12.0 ft bgs	**NOTES:** (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading
14-				

ARSEC	Soil Boring SU22SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/17/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/17/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764265.306	Geologist	Penny Baxter
	Easting Coord.	2312940.597	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.09	Sampling Equipment	SS bowl, spoons, spatula

SU22SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.5 ft: ROOT MAT; with fine gravel	Note: Drillers skidded 5 ft south and 5 ft east to avoid road bed gravel, old railroad tracks, and concrete with rebar.
		CL	0.5-11.0 ft: CLAY; dry, hard, high plasticity, 10YR4/4 dark yellowish brown	
1-				Core gamma @ 1.0 ft 8.040cpm DHG @ 1.0 ft 10,279cpm
2-				
3-				Core gamma @ 3.0 ft 8,340cpm DHG @ 3.0 ft 20,552cpm PNV-SO-SU22-SB001(3.0-4.0ft)
4-				Core gamma @ 4.0 ft 8,193cpm DHG @ 4.0 ft 21,780cpm PNV-SO-SU22-SB001(4.0-5.0ft) PNV-SO-SU22-SB001(4.0-5.0ft) DUP
5-				Core gamma @ 5.0ft 8,745cpm DHG @ 5.0 ft 19,866cpm PNV-SO-SU22-SB001(5.0-6.0ft)
6-				
7-				
8-				
9-				
10-				Core gamma @ 10.0 ft 8,501cpm DHG @ 10.0 ft 18,627cpm
11-				
12-		CL	11.7-14.0 ft: CLAY; dry, hard, medium plasticity, GLEY1-4/1 dark greenish gray	
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU22SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/17/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/17/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764263.815	Geologist	Penny Baxter
	Easting Coord.	2313084.006	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.89	Sampling Equipment	SS bowl, spoons, spatula

SU22SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.3 ft: ROOT MAT	NOTE: Driller encountered free running water at approximately 3ft bgs in original hole. Skidded rig 5 ft south and continued coring. Source of water either encounter with storm drain pipe or entrapped water at base of road bed.
1-		GW	0.3-2.5ft: GRAVEL; well graded	
2-				Core gamma @ 2.0 ft 6,056cpm DHG @ 2.0 ft 5,962cpm
3-		CL	2.5-11.1ft: CLAY; damp, firm, high plasticity, 10YR4/4 dark yellowish brown	
4-				Core gamma @ 4.0ft 6,814cpm DHG @ 4.0ft 17,550cpm PNV-SO-SU22-SB002(4.0-5.0ft)
5-				Core gamma @5.0ft 7,013cpm DHG @ 5.0ft 19,617cpm PNV-SO-SU22-SB002(5.0-6.0ft)
6-				PNV-SO-SU22-SB002(5.0-6.0ft) DUP Core gamma @ 6.0ft 7,052cpm DHG @ 6.0ft 18,644cpm
7-				PNV-SO-SU22-SB002(6.0-7.0ft) PNV-SO-SU22-SB002(6.0-7.0ft) SPLIT PNV-SO-SU22-SB002(6.0-7.0ft) MS/MSD
8-				
9-				Core gamma @ 9.0ft 6,345cpm DHG @ 9.0ft 16,210cpm
10-				
11-				Core gamma @ 11.0ft 6,701cpm DHG @ 11.0ft 14,646cpm
12-		CL	11.1-14.0ft: CLAY; with silt, dry, very hard, medium plasticity, 5Y3/1 very dark gray	
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU22SB003		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/18/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/18/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764386.711	Geologist	Penny Baxter
	Easting Coord.	2312730.197	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	619.87	Sampling Equipment	SS bowl, spoons, spatula

SU22SB003 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.4 ft: ROOT MAT	
		CL	0.4-8.7 ft: CLAY; silty, dry, hard, high plasticity, 2.5Y4/4 olive brown	
1-				Core gamma @ 1.0 ft 10,757cpm DHG @ 1.0 ft 14,493cpm
2-				
3-				Core gamma @ 3.0 ft 11,962cpm DHG @ 3.0 ft 19,816cpm PNV-SO-SU22-SB003(3.0-4.0ft)
4-				Core gamma @ 4.0 ft 10,682cpm DHG @ 4.0 ft 20,010cpm PNV-SO-SU22-SB003(4.0-5.0ft)
5-				Core gamma @ 5.0 ft 12.201cpm DHG @ 5.0 ft 18,747cpm PNV-SO-SU22-SB003(5.0-6.0ft)
6-				
7-				
8-				
		CL	8.7-13.0 ft: CLAY; with silt, dry, very hard, medium plasticity, GLEY1-4/1 dark greenish gray	
9-				Core gamma @ 9.0 ft 12,030cpm DHG @ 9.0 ft 18,756cpm
10-				
11-				
12-				Core gamma @ 12.0ft 11,877cpm DHG @ 12.0ft 16,702cpm
13-			Bottom of Boring @ 13.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU22SB004		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/18/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/18/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764391.712	Geologist	Penny Baxter
	Easting Coord.	2312861.917	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	620.66	Sampling Equipment	SS bowl, spoons, spatula

SU22SB004 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-0.8 ft: FILL; coarse gravel	
1-		CL	0.8-8.6 ft: CLAY; with silt, moist, hard, low plasticity, 10YR4/4 dark yellowish brown	Core gamma @ 1.0 ft 13,076cpm DHG @ 1.0 ft 13,717cpm
2-				
3-				
4-				Core gamma @ 4.0 ft 14,260cpm DHG @ 4.0 ft 20,917cpm PNV-SO-SU22-SB004(4.0-5.0ft)
5-				Core gamma @ 5.0 ft 14,063cpm DHG @ 5.0 ft 21,887cpm PNV-SO-SU22-SB004(5.0-6.0ft)
6-				Core gamma @ 6.0 ft 14,163cpm DHG @ 6.0 ft 21,397cpm PNV-SO-SU22-SB004(6.0-7.0ft)
7-				
8-				
9-		CL	8.6-14.0 ft: CLAY; dry, hard, medium plasticity, GLEY1-4/1 dark greenish gray	
10-				
11-				
12-				
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU22SB005		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/17/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/17/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764392.591	Geologist	Penny Baxter
	Easting Coord.	2313008.145	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	621.76	Sampling Equipment	SS bowl, spoons, spatula

SU22SB005 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.6 ft: ROOT MAT	Note: Drillers skidded rig 5ft south to move away from embankment.
		CL	0.6-6.4 ft: CLAY; silty, damp, hard, low plasticity, 7.5YR4/4 brown	
1-				Core gamma @ 1.0 ft 12,442cpm DHG @ 1.0 ft 12,849cpm
2-				
3-				Core gamma @ 3.0 ft 12,039cpm DHG @ 3.0 ft 20,766cpm PNV-SO-SU22-SB005(3.0-4.0ft)
4-				Core gamma @ 4.0 ft 10,886cpm DHG @ 4.0 ft 21,073cpm PNV-SO-SU22-SB005(4.0-5.0ft)
5-				Core gamma @ 5.0 ft 11,156cpm DHG @ 5.0 ft 20,707cpm PNV-SO-SU22-SB005(5.0-6.0ft)
6-				
		CL	6.4-9.7 ft: CLAY; dry, very hard, low plasticity, 10YR4/4 dark yellowish brown mottled with GLEY2-4/1 dark bluish gray	
7-				
8-				Core gamma @ 8.0 ft 13,918cpm DHG @ 8.0 ft 19,922cpm
9-				
		CL	9.7-14.0 ft: CLAY; with silt, dry, very hard, medium plasticity, GLEY1-4/1 dark greenish gray	
10-				Core gamma @10.0 ft 12,236cpm DHG @10.0 ft 13,572cpm
11-				
12-				
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU22SB006		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/17/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/17/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764152.574	Geologist	Penny Baxter
	Easting Coord.	2313092.898	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.07	Sampling Equipment	SS bowl, spoons, spatula

SU22SB006 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.9ft: ROOT MAT; loose fine grained soil with some concrete fragments, dry	Core gamma @ 0.0 ft 11,155cpm
1-		NR	0.9-6.0 ft: NO RECOVERY	
2-				Core gamma @ 2.0 ft 10,991cpm
3-				
4-				Core gamma @ 4.0 ft 11,907cjpm
5-				
6-		CL	6.0-12.4ft: CLAY; slightly moist, firm, high plasticity, 2.5Y5/4 light olive brown	
7-				Core gamma @ 7.0ft 10,481cpm DHG @ 7.0 ft 19,855 PNV-SO-SU22-SB006(7.0-8.0ft) PNV-SO-SU22-SB006(7.0-8.0ft) DUP
8-				Core gamma @ 8.0 ft 11,398cpm DHG @ 8.0 ft 19,791cpm PNV-SO-SU22-SB006(8.0-9.0ft) PNV-SO-SU22-SB006(8.0-9.0ft) MS/MSD
9-				Core gamma @ 9.0ft 10,425cpm DHG @ 9.0ft 20,236cpm PNV-SO-SU22-SB006(9.0-10.0ft) PNV-SO-SU22-SB006(9.0-10.0ft) SPLIT
10-				
11-				Core gamma @ 11.0ft 10,384cpm DHG @ 11.0ft 14,478cpm
12-				
13-		CL	12.4-14.0ft: CLAY; dry, hard, medium plasticity, GLEY1-4/1 dark greenish gray	
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU22SB007		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/18/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/18/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764164.249	Geologist	Penny Baxter
	Easting Coord.	2313016.546	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.5	Sampling Equipment	SS bowl, spoons, spatula

SU22SB007 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-1.2 ft: FILL; loose gravel and soil	
1-				
		CL	1.2-3.4 ft: CLAY; silty, damp, firm, high plasticity, 10YR5/4 yellowish brown	
2-				Core gamma @2.0 ft 10,919cpm DHG @ 2.0 ft 14,597cpm
3-				
		CL	3.4-7.8 ft: CLAY; silty, dry, firm, high plasticity, 2.5Y5/3 light olive brown	
4-				
5-				Core gamma @ 5.0 ft 10,361cpm DHG @ 5.0 ft 18,091cpm
6-				
7-				Core gamma @ 7.0 ft 11,562cpm DHG @ 7.0 ft 18,658cpm PNV-SO-SU22-SB007(7.0-8.0ft)
8-		CL	7.8-12.0 ft: CLAY; dry, hard, high plasticity, GLEY1-4/1 dark greenish gray	Core gamma @ 8.0 ft 11,851cpm DHG @ 8.0 ft 20,061cpm PNV-SO-SU22-SB007(8.0-9.0ft)
9-				Core gamma @ 9.0 ft 11,461cpm DHG @ 9.0 ft 20,348cpm PNV-SO-SU22-SB007(9.0-10.0ft)
10-				
11-				Core gamma @11.0ft 10,152cpm DHG @11.0ft 14,629cpm
12-				
			Bottom of Boring @12.0 ft bgs	
13-				
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU23SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/20/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/20/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763991.215	Geologist	Penny Baxter
	Easting Coord.	2312884.808	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.45	Sampling Equipment	SS bowl, spoons, spatula

SU23SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.8 ft: ROOT MAT	PID 0.1ppm @ 0.0ft
		CL	0.8-11.0 ft: CLAY; moist, hard, high plasticity, 10YR3/2 very dark grayish brown	
1-				
				PID 0.0ppm at 2.0 ft
2-				Core gamma @ 2.0 ft 9,200cpm DHG @ 2.0 ft 15,226cpm PNV-SO-SU23-SB001(2.0-3.0ft)
3-				Core gamma @ 3.0 ft 9,891cpm DHG @ 3.0 ft 17,643cpm PNV-SO-SU23-SB001(3.0-4.0ft)
4-				Core gamma @ 4.0 ft 9,430cpm DHG @ 4.0 ft 23,074cpm PNV-SO-SU23-SB001(4.0-5.0ft)
5-				PID 0.0ppm @ 5.0 ft
6-				
7-				PID 0.0ppm at 7.0ft
8-				Core gamma @ 8.0 ft 9.631cpm DHG @ 8.0 ft 19,125cpm
9-				PID 0.1ppm @ 9.0 ft
10-				
				PID 0.25ppm @ 11.0ft
11-				TCLP sample at 11.0 ft
		CL	11.0-13.0 ft: CLAY; moist, very hard, medium plasticity, GLEY1-4/1 dark greenish gray	Core gamma @ 11.0ft 9,126cpm DHG @ 11.0 ft 13,267cpm
12-				
13-			Bottom of Boring @ 13.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU23SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/20/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/20/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764041.163	Geologist	Penny Baxter
	Easting Coord.	2312893.313	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.5 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.83	Sampling Equipment	SS bowl, spoons, spatula

SU23SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.6 ft: ROOT MAT	PID 0.5ppm @0.0ft
1-		FL	0.6-1.7 ft: FILL; loose granular fill	Core gamma @ 0.5 ft 9,400cpm DHG @ 0.5 ft 12,182ppm PNV-SO-SU23-SB002(0.5-1.5ft) PNV-SO-SU23-SB002(0.5-1.5ft) DUP
2-		FL	1.7-5.0 ft: FILL; clay, moist, hard, high plasticity	PID 0.25ppm @2.0ft Core gamma @1.5ft 12,117cpm DHG @ 1.5 ft 23,140cpm PNV-SO-SU23-SB002(1.5-2.5ft) PNV-SO-SU23-SB002(1.5-2.5ft) SPLIT PNV-SO-SU23-SB002(1.5-2.5ft) MS/MSD
3-				
4-				PID 0.25ppm @4.0ft Core gamma @3.5ft 10,073cpm DHG @ 3.5 ft 18,630cpm PNV-SO-SU23-SB002(2.5-3.5ft)
5-				
6-		FL	5.0-6.2 ft: FILL; loose dry soil, granite cobbles	**PID 0.5ppm @6.0ft**
7-		FL	6.2-12.6 ft: FILL; clay, moist, hard, high plasticity	TCLP sample collected @6.0 ft
8-				PID 0.2ppm @8.0ft
9-				Core gamma @ 9.0 ft 9,516cpm DHG @ 9.0 ft 15,681cpm
10-				PID 0.3ppm @10.0ft
11-				
12-				PID 0.3ppm @12.0ft
13-		CL	12.6-13.5 ft: CLAY; moist, hard, high plasticity, GLEY1-4/1 dark greenish gray	PID 0.35ppm@13.0ft
14-			Bottom of Boring @ 13.5 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU23SB003		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/18/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/18/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764142.549	Geologist	Penny Baxter
	Easting Coord.	2312862.191	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.6 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	625.18	Sampling Equipment	SS bowl, spoons, spatula

SU23SB003 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-1.3 ft: FILL; loose small gravel and coarse sand	
1-				
2-		CL	1.3-5.1 ft: CLAY; dry, hard, high plasticity, mottled 10YR5/8 yellowish brown and GLEY1-6/1 greenish gray	Core gamma @ 2.0 ft 12,130cpm DHG @2.0 ft 10,205cpm PNV-SO-SU23-SB003(2.0-3.0ft)
3-				Core gamma @ 3.0 ft 12,005cpm DHG @3.0 ft 18,987cpm PNV-SO-SU23-SB003(3.0-4.0ft)
4-				Core gamma @ 4.0 ft 12,076cpm DHG @4.0 ft 20,033cpm PNV-SO-SU23-SB003(4.0-5.0ft)
5-		CL	5.1-13.6 ft: CLAY; silty, very hard, high plasticity, 10YR5/3 brown	
6-				Core gamma @6.0 ft 12,368cpm DHG @ 6.0 ft 17,899cpm
7-				
8-				
9-				Core gamma @ 9.0 ft 12,478cpm DHG @ 9.0 ft 17,664cpm
10-				
11-				
12-				
13-				
14-			Bottom of Boring @ 13.6 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU23SB004		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/18/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/18/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	764264.704	Geologist	Penny Baxter
	Easting Coord.	2312789.660	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	620.93	Sampling Equipment	SS bowl, spoons, spatula

SU23SB004 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.8 ft: ROOT MAT; with loose dirt and pebbles	
1-		FL	0.8-3.3 ft: FILL; loose dry sand fill, color is 10YR4/6 dark yellowish brown.	Core gamma @ 1.0 ft 6,480cpm DHG @ 1.0 ft 8,337cpm
2-				
3-			10% small angular rock at bottom of interval	Core gamma @ 3.0 ft 6,581cpm DHG @ 3.0 ft 10,165cpm
4-		CL	3.3-4.4 ft: CLAY; silty, dry, hard, low plasticity, 10YR4/6 dark yellowish brown (may be compacted fill - see next interval)	
5-		FL	4.4-7.4 ft: FILL; loose gravel and clay fill	
6-				Core gamma @ 6.0 ft 8,620cpm DHG @ 6.0 ft 15,679cpm PNV-SO-SU23-SB004(6.0-7.0ft)
7-				Core gamma @ 7.0 ft 8,446cpm DHG @ 7.0 ft 19,451cpm PNV-SO-SU23-SB004(7.0-8.0ft)
8-		CL	7.4-9.6 ft: CLAY; slightly damp, hard, high plasticity, 10YR4/4 dark yellowish brown	Core gamma @ 8.0 ft 7,496cpm DHG @ 8.0 ft 21,685cpm PNV-SO-SU23-SB004(8.0-9.0ft)
9-				
10-		CL	9.6-13.0 ft: CLAY; dry, hard, medium plasticity, GLEY1-4/1 dark greenish gray	
11-				Core gamma @ 11.0 ft 8,195cpm DHG @ 11.0 ft 15,695cpm
12-				
13-			Bottom of Boring @ 13.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU23SB005		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/20/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/20/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763960.140	Geologist	Penny Baxter
	Easting Coord.	2312885.966	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.76	Sampling Equipment	SS bowl, spoons, spatula

SU23SB005 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.7 ft: ROOT MAT	PID 1.0 ppm at 0.0ft
		FL	0.7-3.1 ft: FILL; loose clay clots	
1-				Core gamma @ 1.0 ft 8,169cpm DHG @ 1.0 ft 10,462cpm
2-				PID 0.7 ppm at 2.0 ft
3-				
		CL	3.1-10.2 ft: CLAY; moist, firm, high plasticity, 10YR5/4 yellowish brown	
4-				PID 0.6 ppm at 4.0 ft PID 1.5 ppm at 4.5 ft TCLP sample at 5.0 ft PID 1.5 ppm at 5.5 ft
5-				Core gamma @ 5.0 ft 8,776cpm DHG @ 5.0 ft 19,416cpm PNV-SO-SU23-SB005(5.0-6.0ft)
6-				Core gamma @ 6.0 ft 9,483cpm DHG @ 6.0 ft 19,345cpm PNV-SO-SU23-SB005(6.0-7.0ft)
7-				PNV-SO-SU23-SB005(6.0-7.0ft) DUP
8-				Core gamma @ 7.0 ft 9,662cpm DHG @ 7.0 ft 18,953cpm PNV-SO-SU23-SB005(7.0-8.0ft) PID 0.7 ppm at 7.5 ft PID 1.05 ppm at 8.5 ft
9-				Core gamma @ 9.0 ft 9,494cpm DHG @ 9.0 ft 17,759cpm PID 0.8 ppm at 9.5 ft
10-		CL	10.2-12.0 ft: CLAY; very moist, soft, high plasticity, GLEY1-4/1 dark greenish gray	PID 0.6 ppm at 10.5 ft
11-				Core gamma @ 11.0 ft 9,099cpm DHG @ 11.0 ft 12,613cpm
12-				PID 1.4 ppm at 12.0 ft
13-			Bottom of Boring @ 12.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU23SB006		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/20/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/20/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763942.625	Geologist	Penny Baxter
	Easting Coord.	2312882.280	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.83	Sampling Equipment	SS bowl, spoons, spatula

SU23SB006 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.5 ft: ROOT MAT	PID 1.1ppm @ 0.0ft
		FL	0.5-3.8 ft: FILL; fine gravel and sand	
1-				
2-				
3-				PID 0.7ppm @3.0ft
4-		CL	3.8-14.0 ft: CLAY; moist, firm, high plasticity, 10YR5/4 yellowish brown	
5-				**PID 1.6ppm @5.0 ft** TCLP Sample collected @ 5.0 ft
6-				
7-				PID 0.25ppm @ 7.0 ft
8-				
9-				Core gamma @ 9.0 ft 10,352cpm DHG @ 9.0 ft 14,758cpm PNV-SO-SU23-SB006(9.0-10.0ft)
10-				PID 0.2ppm @ 10.0 ft Core gamma @ 10.0 ft 11,093cpm DHG @ 10.0 ft 15,371cpm PNV-SO-SU23-SB006(10.0-11.0ft)
11-				Core gamma @ 11.5 ft 10,837cpm DHG @ 11.5 ft 22,022cpm PNV-SO-SU23-SB006(11.0-12.0ft)
12-				PID 0.7ppm @ 12.0 ft
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU25SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/19/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/19/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763616.135	Geologist	Penny Baxter
	Easting Coord.	2312811.954	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.94	Sampling Equipment	SS bowl, spoons, spatula

SU25SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-1.2 ft: FILL, clay and gravel	
1-		NR	1.2-1.7 ft: VOID, perched water	
2-		FL	1.7-2.8 ft: FILL, clay	Core gamma @ 2.0 ft 8,888cpm DHG @ 2.0 ft 13,450cpm
3-		FL	2.8-3.4 ft: FILL, loose, coarse grained sand, wet	
4-		CL	3.4-8.7 ft: CLAY; slightly moist, firm, high plasticity, 2.5Y4/3 olive brown	
5-				Core gamma @ 5.0 ft 9,909cpm DHG @ 5.0 ft 20,241cpm PNV-SO-SU25-SB001(5.0-6.0ft)
6-				Core gamma @ 6.0 ft 10,656cpm DHG @ 6.0 ft 20,695cpm PNV-SO-SU25-SB001(6.0-7.0ft)
7-				Core gamma @ 7.0 ft 10,408cpm DHG @ 7.0 ft 21,390cpm PNV-SO-SU25-SB001(7.0-8.0ft)
8-				
9-		CL	8.7-12.0 ft: CLAY; slightly moist, very hard, medium plasticity, GLEY1-4/1 dark greenish gray	
10-				Core gamma @ 10.0 ft 10,232cpm DHG @ 10.0 ft 13,290cpm
11-				
12-				
			Bottom of Boring @ 12.0 ft bgs	
13-				
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU25SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/19/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/19/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763648.015	Geologist	Penny Baxter
	Easting Coord.	2312866.972	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	12.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.94	Sampling Equipment	SS bowl, spoons, spatula

SU25SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	1.0-1.2 ft: FILL; dark brown clay	
1-				
		CL	1.2-9.0 ft: CLAY: dry, very hard, medium plasticity, 10YR5/8 yellowish brown	
2-				Core gamma @ 2.0 ft 11,621cpm DHG @ 2.0 ft 19,570cpm
3-				
4-				
5-				
6-				Core gamma @ 6.0 ft 12,266cpm DHG @ 6.0 ft 20,713cpm PNV-SO-SU25-SB002(6.0-7.0ft)
7-				Core gamma @ 6.0 ft 10,481cpm DHG @ 6.0 ft 20,746cpm PNV-SO-SU25-SB002(7.0-8.0ft)
8-				PNV-SO-SU25-SB002(7.0-8.0ft) PNV-SO-SU25-SB002(7.0-8.0ft)
9-				Core gamma @ 6.0 ft 11,018cpm DHG @ 6.0 ft 17,999cpm PNV-SO-SU25-SB002(8.0-9.0ft) PNV-SO-SU25-SB002(8.0-9.0ft)
			9.0-12.0 ft: No core available for description	
10-				
11-				Core gamma @ 11.0 ft 11,417cpm DHG @ 11.0 ft 12,795cpm
12-				
			Bottom of Boring @ 12.0 ft bgs	
13-				
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU26SB001		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/19/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/19/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763679.789	Geologist	Penny Baxter
	Easting Coord.	2312922.047	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	13.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.9	Sampling Equipment	SS bowl, spoons, spatula

SU26SB001 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		FL	0.0-1.5 ft: FILL; gravel	
1-				Core gamma @ 1.0 ft 13,218cpm DHG @ 1.0 ft 15,908cpm
2-		CL	1.5-9.5 ft: CLAY; dry, very hard, low plasticity, 10YR5/2 grayish brown	
3-				Core gamma @ 3.0 ft 12,947cpm DHG @ 3.0 ft 20,837cpm PNV-SO-SU26-SB001(3.0-4.0ft)
4-				Core gamma @ 4.0 ft 11,743cpm DHG @ 4.0 ft 21,636cpm PNV-SO-SU26-SB001(4.0-5.0ft)
5-				Core gamma @ 5.0 ft 11,836cpm DHG @ 5.0 ft 20,995cpm PNV-SO-SU26-SB001(5.0-6.0ft)
6-				
7-				Core gamma @ 7.0 ft 12,419cpm DHG @ 7.0 ft 21,192cpm
8-				
9-				
10-		CL	9.5-13.0 ft: CLAY; dry, hard, highly plastic, GLEY1-3/1 very dark greenish gray	Core gamma @ 10.0 ft 12,939cpm DHG @ 10.0ft 14,489cpm
11-				
12-				
13-			Bottom of Boring @ 13.0 ft bgs	
14-				

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU26SB002		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/19/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/19/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763631.786	Geologist	Penny Baxter
	Easting Coord.	2312954.606	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.1 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	622.96	Sampling Equipment	SS bowl, spoons, spatula

SU26SB002 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.5ft: ROOT MAT	Note: Driller hit concrete at 1.5ft. Moved borehole 5 ft south
		CL	0.5-11.6 ft: CLAY; silty, slightly moist, hard, low plasticity, 10YR5/3 brown	
1-				
2-				Core gamma @ 2.0 ft 11,711cpm DHG @ 2.0 ft 13,223cpm
3-				
4-				Core gamma @ 4.0 ft 12,277cpm DHG @ 4.0 ft 20,388cpm
5-				
6-				
7-				Core gamma @ 7.0 ft 12,248cpm DHG @ 7.0 ft 19,863cpm PNV-SO-SU26-SB0023-(7.0-8.0ft)
8-				Core gamma @ 8.0 ft 12,725cpm DHG @ 8.0 ft 20,485cpm PNV-SO-SU26-SB0023-(8.0-9.0ft) PNV-SO-SU26-SB0023-(8.0-9.0ft) DUP
9-				PNV-SO-SU26-SB0023-(8.0-9.0ft) SPLIT Core gamma @ 9.0 ft 12,493cpm DHG @ 9.0 ft 20,618cpm PNV-SO-SU26-SB0023-(9.0-10.0ft)
10-				PNV-SO-SU26-SB0023-(9.0-10.0ft) MS/MSD
11-				Core gamma @ 11.0 ft 12,092cpm DHG @11.0 ft 16,276cpm
12-		CL	11.6-14.1 ft: CLAY; silty, hard, high plasticity, GLEY1-4/1 dark greenish gray	
13-				
14-			Bottom of Boring @ 14.1 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

ARSEC	Soil Boring SU26SB003		Drilling Company:	Bowser Morner
	Painesville Site VURS		Driller	Bruce Kirkpatrick
	Start Date	5/19/2009	Designation of Drill	Versa Sonic V-100
	End Date	5/19/2009	Type of Drill Rig	Rotary sonic
USACE Buffalo District	Northing Coord.	763610.443	Geologist	Penny Baxter
	Easting Coord.	2312996.136	Borehole Diameter	8-in diameter
Contract No. W912P4-07-D-0009	Total Depth of Boring	14.0 ft bgs	Soil Core Diameter	6-in core diameter
	Ground Elev.	623.17	Sampling Equipment	SS bowl, spoons, spatula

SU26SB003 PAGE 1 of 1

Depth in feet (bgs)	Elevation	USCS	DESCRIPTION	REMARKS
0-		RM	0.0-0.4 ft: ROOT MAT	
		FL	0.4-1.8 ft: FILL; gravel	
1-				Core gamma @ 1.0 ft 11,080cpm DHG @ 1.0 ft 7,587cpm
2-		CL	1.8-6.0 ft: CLAY; slightly moist, hard, medium plasticity, 10YR5/8 yellowish brown mottled with GLEY1-6/1 greenish gray	
3-				
4-				Core gamma @ 4.0 ft 10,684cpm DHG @4.0 ft 17,234cpm
5-				
6-		CL	6.0-11.4 ft: CLAY; dry, firm, medium plasticity, 2.5Y4/3 olive brown	
7-				Core gamma @ 7.0 ft 11,065cpm DHG @ 7.0 ft 19,540cpm PNV-SO-SU26-SB003(7.0-8.0ft)
8-				Core gamma @ 8.5 ft 11,607cpm DHG @ 8.5 ft 20,238cpm PNV-SO-SU26-SB003(8.0-9.0ft)
9-				Core gamma @ 9.0 ft 11,361cpm DHG @ 9.0 ft 19,605cpm PNV-SO-SU26-SB003(9.0-10.0ft)
10-				
11-				Core gamma @ 11.0 ft 10,185cpm DHG @ 11.0 ft 18,675cpm
12-		CL	11.4-14.0 ft: CLAY; slightly moist, hard, medium plasticity, GLEY1-4/1 greenish gray	
13-				
14-			Bottom of Boring @ 14.0 ft bgs	

NOTES: (1) Soil Descriptions conform to ASTM D 2488-06. (2) All colors from Munsell Soil Color Charts 2000 Edition. (3) DHG means Downhole Gamma Reading

Geological Log Book

NOTEBOOK NO. 3

ISSUED TO: Penny BAXTER

DATE: 5-14-09

DEPARTMENT: Geology

RETURNED:

Painesville FUSRAP Site

Painesville FUSRAP Site Pre-Remediation Volume
Uncertainty Reduction Subsurface Soil Sampling

Contract No: W912P4-07-D-0009
Delivery Order: 0002

Log Book Start Date: 5-14-09

Log Book End Date: 5-22-09

Scientific Notebook Company – www.snco.com

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SCIENTIFIC NOTEBOOK CO.

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Abbreviations, Acronyms and Symbols

γ gamma

> greater than

" inches

~ approximately

admin administrative

bgs below ground surface

bkgr background

CL clay

COC chain of custody

COE Corps of Engineers

cont continued

cpm counts per minute

CQM Contractor Quality Manager

COR Contracting Officer's Representative

DHG downhole gamma

dia diameter

E EAST

el elevation

fm from

ft feet

gal gallon

GE ground elevation

GPR ground penetrating radar

SCIENTIFIC NOTEBOOK CO.

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GW gravel	
HP health physicist	
med medium	
min minute	
mm millimeter	
mtg ~~meet~~ meeting	
N North	
NE north east	
NW northwest	
p pm	
PCB polychlorinated ~~biphenyls~~ biphenyls	
PID photo-ionization detector	
POD plan of the day	
ppm parts per million	
QA quality assurance	
QC quality control	
rad radioactive	
re about, concerning	
rep representative	
RR rail road	
S south	
SB soil boring	
SU survey unit	

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SVOC semivolatile organic compound	
SW south west	
TAL target analyte list	
TCLP Toxicity Characteristic Leaching Procedure	
techs technicians	
TP test pit	
USACE U.S. Army Corps of Engineers	
V. very	
VOC volatile organic compound	
W West	
w̄ with	

TITLE _____ Project No. _____ Book No. _____

From Page No. __

5-14-09 Thursday
Weather: 70°, Clear, partly cloudy, windy, wind from SW
2:35p Set up drill rig on SU17SB002 GL 624.05 GL
on site 3 drillers, J. Shirley, P. Baxter, B. Simmington, Randy McCrone, Dave Warren, Damon Deville
D. Deville conducted 1 min Surface scan w NaI detector
BKgr 5436 cpm Total Ct 6689 cpm Corrected cpm 1253 cpm
~~2:45p driller starts hole~~ PB 5-14-09
Equipment: Verasonic Sonic Rotary Drill Rig
03:00p pulled 0-6 ft SU17SB002
scan 5.8 ft 4300 cpm 1.3 ft 4900 cpm
0-0.6 clay with surface grass
0.6-6.0 ft Clay, dry, firm, non-plastic, ~~10R 3/1 dark reddish gray~~ ~~5Y 2.5/1 gray~~ 5Y 3/1 very dark gray mottled w 2.5Y 5/6 light olive brown
~~6.0 ft~~
6.0 ft-9.9 ft Clay w trace 20mm angular pebbles, moist. hard, low plasticity, firm 10R 3/1 dark reddish gray mottled w 2.5Y 5/6 light olive brown
9.9 ft - ~~12.0 ft~~ 10.0 ft Clay (CL) w 5% soft, friable shale (5mm) moist, firm, low plasticity
10.0 - ~~12.0 ft~~ 10.8 ft clay (CL) w 20% sand and pebbles mix, moist, firm, non plastic 10R 3/1 dark reddish gray
10.8 - 12.0 ft clay (CL) w 10% angular pebbles, moist, firm, low plasticity, 10R 3/1 dark reddish gray mottled w 2.5Y 5/6 light olive brown
03:40p drilling complete
~~started downhole survey~~
core & ready @12.0 4863 cpm @9 ft 4324, @6 ft 4267 cpm @3 ft 4163 cpm @1 ft 4250 cpm
0400p drillers returned down hole to clean out a 2 ft cave in to allow Downhole Gamma Log (DHG)
See Borehole and Soil Core Gamma Log Sheet for SU17SB002 for core and downhole cpms
Samples PNV-50-SU17-SB0002 (11.0-12.0 ft)
PNV-50-SU17-SB002 (10.0-11.0 ft)
PNV-50-SU17-SB002 (9.0-10.0 ft)

To Page No. _____

Witnessed & Understood by me	Date	Invented by	Date
[signature]	5-14-09	Recorded by	

Project No. _____
Book No. _____ TITLE _____

From Page No. _____ 5-14-09 (cont)

4:30p drillers breakdown fm Su17SB002, moving to Su17SB003

5:20p drillers pull 0.0 - 6 ft (5.8-6.0 ft lost)
Surface scan 7400 cpm net
0.0 - 1.5 ft Clay w fine sand, dry, firm non-plastic, 7.5YR 4/3 brown
1.5 - 3.4 ft fill of fine pea gravel (rounded quartz grains), well sorted from fine (1-2mm) to very coarse (>10mm), dry, 5Y 7/3 pale yellow, loose individual grains, GM
3.4 - ~~4.8~~ 7.7 ft clay w fine silt, moist, firm low plasticity, 2.5Y 4/3 olive brown CL
PB 5-13-09
~~4.8 - 6.0 no recovery~~ PB 5-14-09
7.7 - 9.2 ft clay w fine silt, moist - perched water @ 7.7 ft, firm, low plasticity, 2.5Y 4/3 olive brown CL
9.2 ft - 10.0 ft clay, moist, firm, high plasticity 10YR 3/1 very dark gray

6:20p coring complete, start DHG
PB 5-14-09 ~~So~~ core γ reading @ 2 ft - 9600 cpm, @ 0.0-0.5 ft 7320 cpm
DHG 7.5 ft - 19914 cpm
~~See~~ Borehole and Soil Core γ Log ~~Sheet~~ Su17SB003 for detailed γ readings

0700p collected
PNV-SO-Su17-SB003 (8.0-9.0 ft)
PNV-SO-Su17-SB003 (9.0-10.0 ft)
PNV-SO-Su17-SB003 (7.0-8.0 ft)

0730p left site

Perry Beth
5-14-09

To Page No. _____

Witnessed & Understood by me, P Beth | Date 5-14-09 | Invented by | Recorded by | Date

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5-15-09 Friday
Weather: Sunny, cool light breeze, mid-60's
0700A attended POD
worked on daily reporting forms and office work
1030A went on site to observe first test pit dug
SU20TP002 el 622.83
at 1 ft depth encountered black granular fill material (typically this material was "hot" in past) per M. Kuhn
this layer was not hot
at 2 ft encountered ~1½" dia black metal pipe on South edge of pit, backhoe pulled pipe up to south side of pit
11:00A excavation reached 4 ft depth, operator trimmed out
12:10p pit ~~boring~~ to 4.0 ft
~~Fields~~ 05-15-09 start to do γ scan on wall faces
description (soil) performed, at NW corner of pit
0.0–0.6 ft root mat with well sorted gravels to silts
0.6–1.0 ft loose granular fill 5YR 2.5/1 black
1.0–1.6 ft clay silty, damp, hard medium plasticity, ~~GLEY~~ GLEY 2-3/1 very dark greenish gray w/ discontinuous streaks of 10 black
this horizon has discontinuous lenses ~~of 7.5YR 3/4~~ 5YR 4/4 reddish clay, lenses appear 0.5 ft x 1.0 ft
1.6–2.3 ft silty clay, damp, firm, low plasticity GLEY 2 very dark greenish gray with streaks of yellow orange
2.3 ft–4.0 ft silt (fine) with fine sand (5%), damp, firm, low plasticity, 7.5YR 4/6 strong brown
12:50p return to trailer, work on files
1:50p went to SU17SB004

Witnessed & Under[illegible] 5-~~17~~ 15-09 Date
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[Su17SB004] was drilled between 12:30p - 1:45p
HP's conducting DHG survey when I arrived on site
SB drilling did not recover 5.5 - 6.0 ft interval
0-0.5 ft silty clay, dry, firm, low plasticity, 5YR 3/3 dark reddish brown
0.5-1.1 ft loose silty fine sand, dry, loose w/ no cohesion, contains 40% 15mm rounded pebbles, 5YR 4/3 reddish brown
1.1-3.8 ft clay w/ silt, dry, very hard, non-plastic, 10YR 5/6 yellowish brown
3.8 - 9.2 ft silt w/ clay, dry, v. hard, non-plastic, 10YR 4/3 brown
9.2 - 12.0 ft clay w/ silt, dry, v. hard, high plasticity, GLEY 2 5/1 bluish gray

Core γ readings 0.5 ft 10,661 cpm, 3 ft bgs 11,493 cpm, 8.5 ft 20808 cpm (DHG) 11.0 ft 11,185 cpm

2:30p leave SB004 site
driller started ~~drilling~~ Su17SB005
2:50p returned to [Su20TP002. cont]
Equipment operator had benched back ~~hole~~ pit 5-15-09 pit at 2 ft bgs for safety access
description
4.0-6.0 ft same as 2.3-4.0 ft
3:20p returned to Seaford for lunch
3:30p worked on ~~TP~~ 5-15-09 daily report and forms
4:00p moved to [Su17SB005] for description
0.0-0.4 ft - root mat with loose dry ~~fine~~ TP soil mixed w/ 15mm flat gravel ~~TP~~ 5-15-09
0.4-1.7 ft silty clay, dry, very hard non-plastic, 10YR 5/4 yellowish brown
1.7-2.1 ft silt w/ clay, dry, hard, non-plastic 10YR 5/4 yellowish brown

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SAB 5-15-09

SU17SB005 (cont)

2.1 – 3.2 ft clay w silt, damp, to moist, soft, low plasticity, 10 yR 4/4 dark yellowish brown

3.2 ft bgs perched water

3.2 – 7.5 ft silty clay, dry, hard, low plasticity, 10 yR 5/6 yellowish brown

7.5 – 10.3 ft clay, damp, firm, low plasticity 10 yR 4/4 dark yellowish brown

10.3 – ~~12.0~~ 11.0 ft clay, moist, hard, low plasticity 10 yR 5/4 yellowish brown
dark gray mottles at 10.5 – 11.0 ft that appear to have leaf-like structure

11.0 – 12.0 clay w some silt, slightly moist, very hard, medium plasticity, GLEY 2 5/1 greenish gray

5:30p to test pit SU19TP002 GE 623.00
description from North face of pit
note: East wall encountered bldg foundation from 0.0 – 3.9 ft bgs with ledge at 3.8 ft extending out into pit

North face Description

0.0 – 0.7 ft root mat w loose dry

0.7 – 1.8 ft fill of angular cobble to coarse gravel (130 mm x 50 mm x 30 mm is largest fraction), dry

1.8 ft – 3.9 ft loose granular fill w occasional brick and cobble, color is 2.5 yR 3/3 dark reddish brown

3.9 – 5.0 ft clay, moist, hard, high plasticity, 10 yR 4/6 dark yellowish brown

5.0 – 5.5 ft sloughing sides filling bottom 0.5 ft interval

6:15p completed SU19TP002 description

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m Page No. 5-15-09 (cont)

~~6:3~~ 6:20p went to SW 13 SB 002
DB
5-15-09 got download from J. Shirley and
driller about drilling hole
loose rubble encountered 0-5 ft.
will do soil description tomorrow
07:00p return to Seaford
07:30p End of Day / Lessons Learned Mtg
08:00p leave site

Tony Boxter
5-15-09

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5-16-09. Saturday
weather: lower 70's, warm dry breeze fm SW, partly cloudy w/ sun
7:00 A arrived on site, attended PDD
worked on paperwork
8:45A into site
Operator digging SU 15 TP002
Drillers drilling SU 13 SB001
had refusal at 3 ft on staked location,
skidded rig 18.5 ft to south to redrill
9:30A bore hole TD at 14 ft. ~~SU 15 TP002~~ PDS 5-16-09 SU 13 SB001
0.0 – 0.4 ft root mat mixed w/ surface fill
0.4 – 1.9 ft fill consisting of gravel, undistinguished soil, brick pieces, clay, overall color is 10YR 4/3 brown
1.9 ft – 3.2 ft sandy silt w/ 10mm coarse pebbles probably fill material
3.2 – 3.5 concrete, solid plug, color is GLEY 1 6/1 gray
3.5 – ~~5.4~~ 6.3 ft PDS 5-16-09 compacted clay w/ med gravel (fill) color is 7.5YR 4/4 brown
6.3 – 7.0 ft concrete plug, color is GLEY 1 - 4/1 dark greenish gray
7.0 – 10.7 ft clay, damp, hard, high plasticity 10YR 4/4 dark yellowish brown
10.7 – 14.0 ft clay, damp, hard, medium plasticity GLEY 1-3/1 very dark greenish gray
10:30A completed description of SU 13, SB001
moved to SU 15 TP002.
hole is at 4 ft, HP's are ~~drum & scan~~
11:00 A ready to do description on SU 15 TP002 to 4 ft
NOTE: description on east wall but
North wall has 2 RR ties w/ gravel/dirt base to 1.9 ft. w/ RR ties @ 0.7-1.2 ft
0.0 – 0.4 ft root mat w/ dirt and pebbles
0.4 – 1.3 ft fill of mixed large gravel (60mm) and fill dirt

[signature] 5-16-09

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5-16-09 (cont)

[Su 15 TP 002] description - cont

1.3 ft - 2.6 ft clayey sand, damp, loose granular, 10 YR 4/3 brown

2.6 - 3.2 ft clay, moist firm, high plasticity 2.5Y 5/3 light olive brown, PB 5-16-09 ~~[illegible]~~ found one rounded granitic cobble 70 mm

3.2 - 6.0 ft clay w silt, sl. moist, firm, high plasticity, 7.5 YR 3/1 v. dark gray

11:45A break for lunch

12:30p return to office trailer

1:00p to [Su 13 SB 002]

0.0 - ~~5.0~~ ~~6.0~~ ft loose fill consisting of fines to large cobbles and broken brick and broken concrete NOTE: per driller, bit dropped 4.0-5.0 ft PB 5-16-09 5.5 PB 5-16-09 4.0-~~5.0~~ ~~5.0~~ only 1.5 ft recovered

5.5 - ~~6.0~~ ~~10.2~~ 11.4 ft clay w silt ~~and some small~~ PB 5-16-09 moist, hard, high plasticity, 7.5 YR 4/6 strong brown PB 5-16-09 PB 5-16-09

11.4 - 13.0 ft clay, moist hard, high plasticity GLEY 1 3/1 very dark greenish gray per driller used 20 bags sand to backfill hole (usual is 9-10 bags) due to void at 4.0 ft

1:20 ~~1:40~~ P stopped by drill site Su 13 SB 003 to checking on soil boring, drillers had just pulled all core out of hole PB 5-16-09

1:40p went to Su 21 TP 001 hole had been excavated to 4 ft and HPS were conducting a survey

1:50p went to Su 14 TP 003, operator was at the 2 ft level

2:10p PB 5-16-09 ~~Su 13~~ [Su 13 SB 003] description PB 5-16-09

0.0 - 3.2 ft loose fill - clay w some fine gravel and brick pieces, dark brown

3.2 - 4.7 ft clay, moist, hard, high plasticity, 2.5Y 3/1 very dark gray

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5-16-09 (cont) SU13 SB003 cont

4.7 — 7.3 ft ~~clay w silt, damp, hard~~ PB 5-16-09 ~~high plasticity, 2.5y 4/3 olive brown~~ clay, damp, hard, med plasticity 2.5y 4/3 olive brown

7.3 — 13.2 ft clay w silt, damp, hard, high plasticity, 2.5y 4/3 olive brown

13.2 — 14.0 ft clay, damp, hard medium plasticity GLEY2 4/1 dark bluish gray

4:15p arrival at [SU14 ~~SB~~ PB 5-16-09 TP003] north face

0.0 — 0.9 ft root mat

0.9 — 1.9 ft fill compacted clay and coarse gravel

1.9 — 2.2 ft discontinuous black granular fill

2.2 — 5.7 ft fill of compacted clay with visible brick

5.7 ft — 6.2 ft asphalt layer

4:30p to [SU21 TP001] east face

0.0 — 0.7 ft root mat, dry

0.7 — 1.3 ft fill of coarse gravel, dry

1.3 — 4.7 ft compacted clay w brick and gravel fill

4.7 — 5.2 ft PB 5-16-09 black to dark gray clay fill ~~with occasional~~ PB 5-16-09

5.7 — 6.0 ft clay, moist, hard, medium plasticity, 5YR3/1 very dark gray

5:10p talked to drillers

5:40p to admin trailer for paperwork

Greg Booth
5-16-09

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5-17-09 Sunday
Weather: AM upper 40's, cold breeze, overcast
0630A POD
0700A to site drillers drilling SB SU 22 SB006 ~~TD 14 ft~~ PB 5-17-09
Excavation SU 14 TP001 in progress
0730A to admin trailer, completed client progress report for Friday
Paperwork
0900A to SU 22 SB 006
0 - ~~6.0 ft~~ 0.9 ft root mat, loose fine grained soil w some concrete fragments, dry PB 5-17-09
~~0.9 - 6.0 ft Silty clay, dry, very hard, low plasticity (poor recovery~~ PB 5-17-09 PB 5-17-09
0930A drill rig encountered free ~~w~~ runny water at about 3 ft at SU 22 SB007 (GE 622.89) skidded rig 5 ft South. Water was flowing fm gravel road bed
Talked to Client rep B. Simmington about returning core to ~~that~~ original hole per COR, OK if seem first
Note: can see in hole, water entering at ~3 ft from each side of boring 1/4 steady trickle
0942A SU 22 SB006 (cont)
0.9 - 6.0 ft (cont.) ~~very poor rec~~ PB 5-17-09 No recovery this interval
6.0 - ~~9.2~~ 12.4 ft clay, slightly moist, firm, high plasticity, 2.5Y 5/4 light olive brown PB 5-17-09
12.4 - ~~9.2~~ 14 ft clay, dry, hard, medium plasticity, GLEY 1 - 4/1 dark greenish gray PB 5-17-09
10:00A to rig discuss ~~[illegible]~~ soil boring and missed core, talked to COR
11:00A to test pit area to check on progress of pits

[signature]
5-17-09

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5-17-09 (cont)

SU 13 SB004

0 – 0.4 ft root mat and surface soil
0.4 – 2.8 ft clay, silty, slightly damp, hard, non-plastic, 2.5y 4/3 olive brown
2.8 – 4.1 ft (void full) of soil and angular gravel
4.1 – 5.4 ft clay, slightly damp, hard, non plastic, 5y 3/2 dark olive gray
5.4 – 6.3 ft clay w silt, some small gravel pieces, dry, hard, non-plastic 2.5y 3/3 dark olive brown mottled w. 2.5y 5/6 light olive brown
6.3 – 9.1 ft clay, dry, very hard, non-plastic 2.5y 4/3 olive brown (this interval is hard to cut w knife and very stiff)
9.1 – 14.0 ft clay w 1% ~~shale tile~~ rounded, dark, rock ~~fragments~~ (10 mm), slightly damp, hard, 5y 4/4 olive with dark gray mottled

TB 5-17-09

1200p SU 22 SB002

0.0 – 0.3 ft root matt
0.3 – 2.5 ft gravel, well graded, GW,
2.5 – 11.1 ft clay, damp, firm, high plasticity, ~~10R~~ 10yR 4/4 dark yellowish brown
5-17-09
11.1 – 14.0 ft clay w silt, dry, very hard, medium plasticity, 5y 3/1 very dark gray

12:40p drillers decomned rig
set up on SU 22 SB001
NOTE: Drillers skidded rig 5 ft S and 5 ft E from orig hole to avoid road bed gravel (or storm drain at road side) and 5 ft E to avoid bed RR tracks and concrete w rebar

1:00p break for lunch
1:15p work on SAT QA report
coordinate with Dave Warren (ARSec) and M. Kuhn (ARSec)

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5-~~19~~ 17-09 (cont)
PB 5-17-09 2:00p

SU14TP001 North wall
per HP tech SW corner has elevated readings to 19Kcpm
South wall has concrete slab and footer
0 - 0.5ft root mat
0.5 - 1.7 ft gravel fill
1.7 - 1.9 ft clay fill compacted
1.9 - ~~3.2~~ 3.1 ft ~~PB~~ PB 5-17-09 old degraded root bed
3.1 ~~3.2~~ PB 5-17-09 - 6.0 ft clay w/ 5% gravel, damp, firm, low plasticity 2.5y 3/3 dark olive brown
2:45p went to SU15TP001, South wall is concrete operator met refusal at concrete footer at 4.0 ft, unable to continue
3:00p to ~~site on~~ PB 5-17-09 Site SU22SB001 and marked one for HP tech survey
driller set up on SU22SB005 moved 5 ft to south away from ~~fence line~~ PB 5-17-09 ~~and~~ drop off to fence line
3:20p went to SU15TP001 to describe, no ladder or hole
3:30p to admin Trailer work on QC report
4:00p to SU15TP001 for description (West wall)
0 - 0.4 ft root mat
~~0.4 - 2.8 ft gravel fill~~ PB 5-17-09
0.4 - 2.8 ft gravel fill - finer gravel to 1.7 ft coarse gravel 1.7 - 2.8 ft
2.8 - 4.0 ft clay, slightly damp, very hard, low plasticity 2.5y 4/4 olive brown
4:20p to SU19TP003 waited for techs to complete survey

PBarton 5-17-09

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5-17-09 (cont)

Su 19 TP003 (west well)

Note: North wall had concrete pad at surface and SW corner has concrete corner to 4.5 ft

0 – 1.4 ft root mat and coarse gravel

1.4 – 3.9 ft compacted clay fill with granular fill at 3.3 ft

3.9 – 6.0 ft clay, slightly moist, hard, low plasticity, 10 YR 5/6 yellowish brown mottled with GLEY2 5/1 bluish gray

BB 5-17-09 5:00p to ~~60 min + under SU22SB002~~ SU22SB005

driller is coming off hole

full core recovery

Benny Barth 5-17-09

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5-18-09 Monday
0700 POD weather: mid-40's, sunny, clear
0730 SU22SB001
0-0.5 ft fine gravel w root mat
0.5-11.7 ft clay, dry, hard, highly plastic 10YR 4/4 dark yellowish brown
11.7-14 ft clay, dry, hard, medium plastic GLEY1-4/1 dark greenish gray

0816A SU22SB005
0.0-0.6 ft root mat
0.6-6.4 ft clay ~~wet~~ POD 5-18-09 silty, damp, hard, low plasticity, 7.5YR 4/4 brown
6.4-9.7 ft clay, dry, very hard, low plasticity, 10YR 4/4 dark yellowish brown mottled with GLEY2-4/1 dark bluish gray
9.7-14.0 ft clay w silt, dry, very hard, medium plasticity, ~~GLEY2~~ POD 5-18-09 GLEY1-4/1 dark greenish gray

0850A talked to Pete Zeeman about SU22SB004, marked core w depths
drillers moved to ~~SU22SB004~~ POD 5-18-09 SU22SB003
0900A to Admin Trailer for catch up paperwork
1000A to SU14TP002
operator is at about 4ft., observed significant number of brick rubble, concrete and a steel plate ~18" x 4ft along w dark dirt, loose
1030A to SU22SB003 to check progress
0.0-0.4 ft root mat
0.4-8.7 ft clay, silty, dry, hard, high plasticity 2.5Y 4/4 olive brown
8.7-13.0 ft clay w silt, dry, very hard, medium plasticity, GLEY1-4/1 dark greenish gray

[signature] 5-18-09

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5-18-09 (cont.)

SU22SB004

0-0.8 ft gravel fill, coarse

0.8-8.6 ft clay & silt; moist, hard, low plasticity 10yR 4/4 dark yellowish brown

8.6-14.0 ft clay, dry, hard, medium plasticity GLEY1-4/1 dark greenish gray

11:20A completed disruption and labeling of above 2 cores

went to SU14TP002 and SU16TP002 (the boring was moved 100ft west when concrete pad was found at surface)

had to record readings for SU14TP002

relieved by Eric Schmitt

12:15p returned to admin trailer to work on daily quality reports

12:45p driller's company delivered drums for decon

100p to Admin trailer, work on daily reports

1:15p – ~~2:00~~ 2:00 lunch break

2.00p continue ~~to work~~ on daily reports

3:20p ~~SB~~ SU23SB004

~~0.0-0.8~~ 0.0-0.8 ft root mat and loose dirt, pebbles

0.8-3.3 ft loose dry sand fill color is 10yR 4/6 dark yellowish brown some (10%) small angular at bottom of interval

3.3-4.4 ft clay, silty, dry, hard, low plasticity, 10yR dark yellowish brown (may be compacted fill - see next interval)

4.4-7.4 ft loose gravel and clay fill

7.4-9.6 ft clay, slightly ~~dry~~ damp, hard high plasticity, 10yR 4/4 dark yellowish brown

9.6-13.0 ft clay, dry, hard, medium plasticity, GLEY1 4/1 dark greenish ~~Clay~~ GRAY

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5-18-09 (cont)
4:00p to ~~test pits~~ for description
[SU16 TP002] N. wall
0-0.5 ft coarse gravel surface cover
0.5-2.3 ft brick rubble (mostly red brick)
2.3-6.0 ft compacted clay fill
note: rebar (3-1½" pieces at 6.0 ft indicating fill to 6 ft)
Note: water seepage at 3 ft in NE corner of pit, SW corner pit wall is wet from ~3.5 ft into hole

04:30p [SU14 TP002] east wall
0-0.5 ft coarse gravel surface cover
0.5-2.3 ft fill mostly brick (~~red~~ Red and cream color) GB 5-18-09
2.3-4.7 ft clay, sticky, hard, damp, medium plasticity, 10 yR 5/4 yellowish brown
4.7-5.5 ft clay, moist, firm, high plasticity, GLEY 1-2.5 10y greenish black

5:00p drillers pulled off SU22 SB007
decomned rig
~~5:30p drillers PBS-18-09 set up on SU23 SB001 PB~~ 5-18-09
5:30p drillers set up on SU23 SB004
5:40p went to Admin trailer
B. Simmington picked up CQC reports for Sat and Sun. still needs COC forms
started on CQC for today

6:30p called out to describe SU16 TP001
[SU16 TP001] East wall
0-0.4 ft root mat
0.4-4.4 ft fill, clay and gravel
storm drain (and clay pipe) at 3.6-4.4 ft
4.4-6.0 ft clay, damp, hard, medium plasticity 10 yR 5/4 yellowish brown

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5-19-09 Tuesday
Weather: Sunny, upper 40's, light breeze
0700A arrive at SU22 SB007 to describe

SU22 SB007
0-1.2 ft fill, loose gravel and dirt
1.2-3.4 ft clay, silty, damp, firm, high plasticity
10 YR 5/4 yellowish brown
3.4 - 7.8 ft clay, silty, dry, firm, high plasticity
2.5 y 5/3 light olive brown
7.8 - ~~13~~ 12.0 ft clay dry, hard, high plasticity
BB 5.19.09 GLEY1 4/1 dark greenish gray

0800A drillers have completed SU25SB001

SU25 SB001
0.0 - 1.2 ft ~~clay~~ fill, clay and gravel
1.2 - 1.7 ft ~~perch~~ void, perched water
1.7 - 2.8 ft clay fill
2.8 - 3.4 ft loose, coarse grained sand
wet
3.4 - 8.7 ft clay, ~~damp~~, slightly moist,
firm, high plasticity, 2.5 y 4/3
olive brown
8.7 - 12.0 ft clay, slightly moist, very hard,
medium plasticity, GLEY1 - 4/1
dark greenish gray

0900A return to Admin, trailer
work on yesterday's CQC
Geophysics subcontractor on site
walked GPR survey in Admin Trailer
parking lot

10:40A returned to site
went to SU19TP001, operator hit water (sewer?)
line at ~3.5 ft
client suggested using the 1000 gal poly tank
~~SU20~~ to ~~pump~~ contain the water pumped out
SU20TP001 is at 4 ft. This pit ~~hole~~ was dug
on old RR siding. Several ties removed. Gray gravel
RR bed to ~ 3 ft.

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5-19-09 (cont)

1100A to [Su 19TP004] "Stairway to Hell" pit
operator met refusal at ~1 ft - concrete slab
pit area ~~is~~ was in confined concrete
area and filled w brick and dirt
rubble

1120A [Su 23 SB003] drilled 5-18-09
0 – 1.3 ft fill loose small gravel and coarse sand
1.3 – 5.1 ft clay, dry, hard, high plasticity
mottled 10 yR 5/8 yellowish brown and,
GLEY 2 - 6/1 greenish gray
5.1 – 13.6 ft clay, silty, very hard, high
plasticity 10 yR 5/3 brown

1200p to Admin Trailer
talk to M. Krohr re Turnover
on sampling for TCLP
Shawn Andrews (USACE) arrived on site

200p to [Su ~~22~~ 23 SB002] drilled 5-19-09
0 – 0.5 root mat
0.5 – ~~12.6~~ 11.6 ft clay, silty, slightly moist,
hard, low plasticity, 10 yR 5/3 brown
~~12.6~~ 11.6 – 14.1 ft clay, silty, hard, high plasticity
GLEY 1 4/1 dark greenish gray

240p completed description of above core hole
went to ~~Su 22~~ Su 26 SB003
to mark length of core
hit concrete at ~2.0-2.5 ft
Driller had moved hole 5 ft south
because he had encountered refusal
at 2 ft, hit same concrete in new
core hole

[NOTE] COE gave permission to ship
samples today

P Barton 5-19-09

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5-19-09 (cont)
~~3.03~~ 3-19-09
3.40p called to describe Su20 TP001
350p [Su20 TP001] East wall
Note: This pit crosses an old RR siding that ran from E-W, south wall has concrete pad 2-3 ft interval
0-~~1.5~~ 2.0 ft 5-19-09 coarse gravel from RR bed
2.0-5.4 ft clay, moist, firm, low plasticity 10yR 5/8 yellowish brown mottled w 5GY 2-4/1 dark bluish gray
5.4-6.0 ft clay, silty, moist, hard, medium plasticity, 2.5y 5/4 light olive brown
0420p completed Su20 TP001 description
500p to Admin trailer to complete CQC for 5-18-09
545p to Su26 SB003 to mark off core w/ Pete Freeman
610p to Su19 TP001, diggin to 6 ft
to Su18 TP001 - pit is at 4 ft bgs
645p Su19 TP001, tech finished pit survey
[Su19 TP001] West wall
0-0.7 ft root matt and soil
0.7-2.0 ft fill, coarse gravel
2.0-4.8 ft clay w silt, 5% sand, moist, hard high plasticity, 7.5yR 5/6 strong brown
4.8-6.0 ft clay, moist, hard, high plasticity 7.5yR 5/6 strong brown
Note: 2 clay pipes encountered running from N-S in N and S pit walls
700p waited for go ahead to get in Su18 TP001, pit was deepened to 6 ft, crew decided not to survey tonight
800p left site

P Bartin 5-19-09

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nessed & Understood by me,	Date	Invented by	Date
		Recorded by	

From Page No. _

5-20-09 Wednesday
0700 to site
0720 to SU 23SB006
PID 0.0 ft 1.1 ppm
~~1.6~~ 3 ft 0.7 ppm
TCLP - 5.0 ft 1.6 ppm
5.5 ft 0.2 ppm
7.0 ft 0.25 ppm
10.0 ft 0.2 ppm
12.0 ft 0.7 ppm
14.0 ft 0.95 ppm

Samples (TCLP)
Samples taken at 5 ft bgs where highest PID reading
3 bottles 2 - 4 oz for SVOC, TAL metals, ~~Be~~ PCB, pesticides

~~SU~~
SU 26 SB003
0.0 - 0.4 ft root mat
0.4 - 1.8 ft gravel fill
1.8 - 6.0 ft clay, slightly moist, hard, medium plasticity 10YR 5/8 yellowish brown mottled w GLEY 1 - 6/1 greenish gray
6.0 - ~~10.9~~ 11.4 ft clay, dry, firm, medium plasticity 2.5Y 4/3 olive brown
PB 5-21-09
11.4 - 14 ft clay, slightly moist, hard, medium plasticity, GLEY 1 4/1 dark greenish gray
PB 5-20-09

0915A SU 23SB005 TCLP sample @ 5 ft

0 - 0.7 ft root mat
0.7 - 3.1 ft, fill loose clay clots
3.1 - 10.2 ft clay, moist, firm, high plasticity 10YR 5/4 yellowish brown
10.2 ft - 12.0 clay, moist, soft, highly plastic, GLEY 1 - 4/1 dark greenish gray

PID 0.0 ft 1.0 ppm
2.0 ft 0.7 ppm
4.0 ft 0.6 ppm
4.5 ft 1.5 ppm
TCLP 5.5 ft 1.5 ppm
7.5 ft 0.7 ppm
8.5 ft 1.05 ppm
9.5 ft 0.8 ppm
10.6 ft 0.6 ppm
12.0 ft 1.4 ppm

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[signature]	5-20-09		
		Recorded by	

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5-20-09 (cont)

SU23 SB006 TCLP sample @ 5.0 ft
0.0 – 0.5 ft root mat
0.5 – 3.8 ft fill fine gravel and sand
3.8 – 14.0 ft Clay, moist, firm, high plasticity 10 yR 5/4 yellowish brown

SU23 SB001 PID

0.0 ft	0.1 ppm	5.0 ft	0.0 ppm
2.0 ft	0.0 ppm	7.0 ft	0.0 ppm
4.0 ft	0.0 ppm	9.0 ft	0.1 ppm

TCLP 11.0 ft ~~0.0~~ 0.25 ppm

1:30p SU23SB001 TCLP sample @ ~~3.0 – 4.0 ft~~ 11.0 ft
0 – 0.8 ft root mat
0.8 – 11.0 ft clay moist, hard, high plasticity, ~~11.0 – 13.0 ft~~ 10 yR 3/2 very dark grayish brown
11.0 – 13.0 ft clay moist, v. hard, medium plasticity GLEY 1 – 4/1 dark greenish gray

2:00p SU23 SB002 TCLP @ 6.0 ft
0 – 0.6 ft root mat
0.6 – 1.7 ft loose granular fill
1.7 – ~~12.4~~ 5.0 ft clay, moist, hard, high plasticity
~~Note 1.5 – 6 bgs~~
5.0 – 6.2 ft fill, loose dry soil, granite cobble
6.2 – 12.6 ft same as 1.7 – 5.0 ft
12.6 – 13.5 ft clay, moist, hard, high plasticity, GLEY 1 – 4/1 dark greenish gray

PID Readings

0	0.5 ppm	10 ft	0.3 ppm
2 ft	0.05 ppm	12 ft	0.3 ppm
4 ft	0.25 ppm	13 ft	0.35 ppm
~~TCLP~~ 6 ft	0.5 ppm		
8 ft	0.2 ppm		

TCLP sample @ 6.0 ft

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5-20-09 (cont.)
2:30p Weather: Sunny, clear, low 80's
2:40p completed description of SU23 SB002
rode Eastern half of site to find
Test pits done
SU19TP001 to 6 ft, surveyed and ready for description
~~SU19TP001~~ PB 5-20-09

3:20p ~~3:30p~~ SU19TP001 PB 5-20-09 West wall
0–0.7 ft root mat
0.7–2.0 ft fill, coarse angular gravel
2.0–2.8 ft fill fine sand and small gravel
2.8–3.3 ft ~~layer of~~ black layer of fill consisting of medium gravel and
~~3.3–6.0 ft~~ black clay
3.3–6.0 ft clay damp, hard, high plasticity
10YR 5/8 yellowish brown mottled w ~~GLEY 7-6/1~~ PB 5-20-09 GLEY 2-4/1 dark bluish gray,
Note: Metal pipe runs across pit from NE–SW at about 2.8 ft bgs (pipe is ~4-in dia)
Note: Operator pumped ~275 gal from pit, pipe is still letting in a trickle of water.

4:00p SU18TP001 EAST wall
0–0.8 ft root mat
0.8–2.7 ft fill coarse gravel and dirt
2.7–6.0 ft clay, damp, firm, high plasticity
~~5YR 5/6~~ PB 5-20-09 10YR 4/6 dark yellowish brown
Note: red clay pipe at ~3.0 ft showing on East wall, no seepage

4:30p Go staked location of SU19TP003
~~Note:~~ PB 5-20-09

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Witnessed & ~~Understood~~ by me, [signature] Date 5-20-09 Invented by Recorded by Date

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5-20-09 (cont)

4:45p to SU1 SB002 to mark out core for Pete Freemon

drillers move to SU1 SB001 to start coring

5:30p return to Admin Trailer to work on paperwork

6:00p called out to SU15 TP003 for description

SU15 TP003 Each wall

0-0.8 ft root mat

0.8-1.6 ft fill gravel coarse

1.6-2.7 ft fill, dark, stained ~~San~~ fine sand w/ strong petroleum smell (only appears on East wall) PB 5.20.09

2.7-6.0 ft clay, damp, hard, slightly plastic, 10YR 5/8 yellowish brown mottled w/ GLEY2 4/1 dark bluish gray

6:30p returned to Admin Trailer for paperwork

8:00p left site

Bruce Barton
5-20-09

To Page No. ____

Witnessed & Understood by me,	Date	Invented by	Date
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5-21-09 Thursday
Weather: Sunny, clear, mild, no breeze mid-50's
0700 arrive at Admin Trailer
0720 arrive at SU1 SB 002 to mark depths on core
~~go to SU 23 SB for description~~
~~SU 23 SB00~~ PD 5-21-09
0730A to Admin Trailer for paperwork
0900A called to SU2 SB002
NOTE: Strong acrid chemical smell coming from hole
Readings in Multi Rae
3.6 ft VOC 11.85 ppm
CO 20 ppm
O_2 19.9 ppm
5.0 ft VOC 80+ ppm
CO 17 ppm
7.0 ft VOC 101 ppm
CO 24 ppm
H_2S 2 ppm
Sample for VOC's etal will be collected at 7.0 ft
SU 2 SB 002
0 – 1.6 ft Fill, loose fine gravel and asphalt
1.6 – 3.9 ft clay, dry, very hard, low plasticity
10 yr 4/4 dark yellowish brown
NOTE: Very strong acrid chemical smell noticed.
See immediately above for PID + readings
3.9 – 5.5 ft clay, wet, soft, low plasticity
2.5 y 4/3 olive brown
Note: strong odor present as above
5.5 – 9.4 ft clay, dry, v. hard, low plasticity
2.5 y 5/4 light olive brown
9.4 – 12.5 ft clay, slightly moist, medium plasticity
~~Not~~ GLEY 1 4/1 dark greenish gray
Note: strong odor not present this interval

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5-21-09 (cont)
~~HOOA~~ returned to Admin Trailer
1200p worked on daily reports
1:30p computer crashed Steve Stock it to Best Buy, not fix, ARSEC sending XP disk for tomorrow delivery
2:30p help Mark Krohn do QA check on 3 loaded coolers
3:00p called to field to SU2 SB001 to mark depth intervals for rad surveyor
Stayed for completion of SU2 SB003 to mark depths

Terry Bart
5-21-09

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Witnessed & Understood by me,	Date	Invented by	Date
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5-22-09 Friday
Weather: Sunny, clear upper 60's
700A arrive on site
730A to SU17 SB001
this boring was moved from original location inside the fence to outside fence in parking lot.

SU17 SB001
0-0.2 ft asphalt plug from parking lot
0.2-1.9 ft fill, ~~so~~ loose, mix sand and fine gravel
1.9-5.6 ft clay, moist, hard, high plasticity
~~5.6-9.7 ft~~ PB 5-22-09 2.5y 4/3 olive brown
5.6-9.7 ft clay, silty, slightly moist, hard
medium plasticity, 10yR 5.8 yellowish brown mottled to 2.5y 5/3 light olive brown., core broke into fractures horizontally
9.7-12.3 ft clay, moist, firm, highly plastic
~~12.3-14.2 ft~~ PB 5-22-09 10yR 5/4 yellowish brown
~~9.7-12.3 ft~~

12.3-14.2 ft clay, dry, very hard, highly plastic
GLEY 1 3/1 very dark greenish gray
800A finished core description
cleaned out my materials from trailer
830A to SU26 SB001
0-1.5 ft fill gravel
1.5-9.5 ft clay, dry, very hard, low plasticity, 10yR 5/2 grayish brown
9.5-13.0 ft clay, dry, hard, highly plastic
~~10yR 5/4~~ PB 5-22-09 GLEY 1 3/1 very dark greenish gray
0900A completed above description
0910A SU1 SB001
0-1.0 ft root mat
1.0-1.7 ft loose gravel fill
1.7-10 ft clay silty, moist, very hard, medium plasticity
10yR 5/2 grayish brown

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5-22-09 (cont)

SU1 SB001 (cont)

10.0 — 13.5 ft clay dry hard, highly plastic GLEY1 3/1 very dark greenish gray

9:30A finished description of above boring

~~SB1~~ PB 5-22-09

SU1 SB002

0 - 0.4 ft root mat

0.4 - 1.3 fill loose gravel

1.3 - 5.5 clay, slightly moist, hard, low plasticity 10yR 4/6 dark yellowish brown mottled w 7.5yR ~~2.5/1~~ PB 5-22-09 2.5/1 black

core exhibited platy break across core

5.5 - 11.3 ft clay moist, hard, medium plasticity, 10yR 4/3 brown

11.3 - 13.0 ft clay moist, hard, highly plastic, GLEY1 3/1 very dark greenish gray

10:00A SU 2 SB001

0 - 6.0 ft fill - loose gravel to clay and gravel mix

6.0 - 6.5 fill - concrete plug

6.5 - ~~10~~ 12.0 ft clay, moist, hard medium plasticity, 10yR 4/3 brown

12.0 - 13.1 ft clay, dry, hard, medium plasticity, GLEY1 3/1 very dark greenish gray

PB 5-22-09

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		Recorded by	

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5-22-09 (cont)

10:20A 542 SB003

0-0.8 ft fill - gravel and sand
0.8-6.0 ft clay, silty, slightly moist, very hard, medium plasticity, 10YR 5/8 yellowish brown
this section of core breaks across (platy)
6.0-10.3 ft clay, moist, very hard, high plasticity, 10YR 4/3 brown
10.3-13.9 ft clay, dry, hard, highly plastic, GLEY1 3/1 very dark greenish gray

10:40A completed description of above core
10:45A 5425 SB003

0-1.2 ft fill clay dark brown
1.2-9.0 ft clay, dry, very hard, medium plasticity
~~9.0 ft no description~~ PG 5-22-09
10YR 5/8 yellowish brown
9.0- ft no description available

Terry Butler
5-22-09

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Witnessed & Understood by me, | Date | Invented by | Date
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No Further Entries This Log Book
Gary Butler 5-22-09

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Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	

Appendix F. Test Pit Field Survey Forms

Test Pit Field Survey Forms

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name SO 14 TP001	Painesville FUSRAP Site
Date of Activity 5-17-09	
Time of Activity	
Surveyor Name Damon Deville	
Sampler Name Damon Deville	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SO 14 TP001	764171.634	2313651.548

	Gamma Survey Equipment GB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	172031	
Detector Serial No.	PR 277111	

1 min static count 5224 @ surface

Signature (Surveyor) — Date 5-18-09

Signature (Sampler) — Date 5-18-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	5224	5000	4800	Standard	PNV-SO-SO14TP001-S-51809
(Pit Bottom)	11392	10,000	9834	Standard	PNV-SO-SO14TP001-BT

Note 1: Surface Gamma Readings taken before test pit excavation.

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU14 TP001		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	6137	5500	5126		
0.5	6637	6000	5513		
1.0	8635	8000	7816		
1.5	8961	8400	8365		
2.0	9899	9500	9069		
2.5	10495	9000	8453		
3.0	9574	9000	8438		
3.5	10285	9800	9616		
4.0	11636	9900	9616	Standard	PNV-SO-SU14TP001 NW(3.0-3.5)51809
4.5	10326	9500	9181		
5.0	10900	9900	9884		
5.5	11406	11000	10395		
6.0	11022	11000	10788		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4508	4000	3742		
0.5	8336	7600	7250		
1.0	8580	8100	7769		
1.5	8523	8200	7946		
2.0	9140	8700	8448		
2.5	9787	9600	9585		
3.0	9883	9500	9242		
3.5	9876	9800	9798		
4.0	10657	10000	9762		
4.5	10665	10000	9950		
5.0	15182	11000	10101	Standard, Duplicate	PNV-SO-SU14TP001 SW(5.0) 51809
5.5	12107	11000	10971	MS/MSD, SPLIT	
6.0	11805	11500	11236		
6.5				6-2-09	
7.0					

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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SO14 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5835	5400	4882		
0.5	8415	7000	6202		
1.0	8865	8200	7768		
1.5	9394	8700	8212		
2.0	9252	8900	8576		
2.5	10165	9800	9521		
3.0	10653	9800	9288		
3.5	10460	9900	9566		
4.0	10807	10500	10009	Standard	PNV-SO-SO14TP001 EW(3.5-4.0) 51809
4.5	10002	9900	9584		
5.0	11253	10900	10504		
5.5	11292	10900	9933		
6.0	11496	10900	10017		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5522	4000	3881		
0.5	7251	6000	5241		
1.0	8612	8000	7504		
1.5	8699	8000	7783		
2.0	9519	9000	8168		
2.5	9622	8700	8138		
3.0	9370	9000	8267		
3.5	10427	9700	9300		
4.0	10867	9400	8460		
4.5	11812	10500	10018		
5.0	10764	10000	9211		
5.5	10909	10850	10813		
6.0	11671	11300	10953		
6.5					
7.0					

ARSEC
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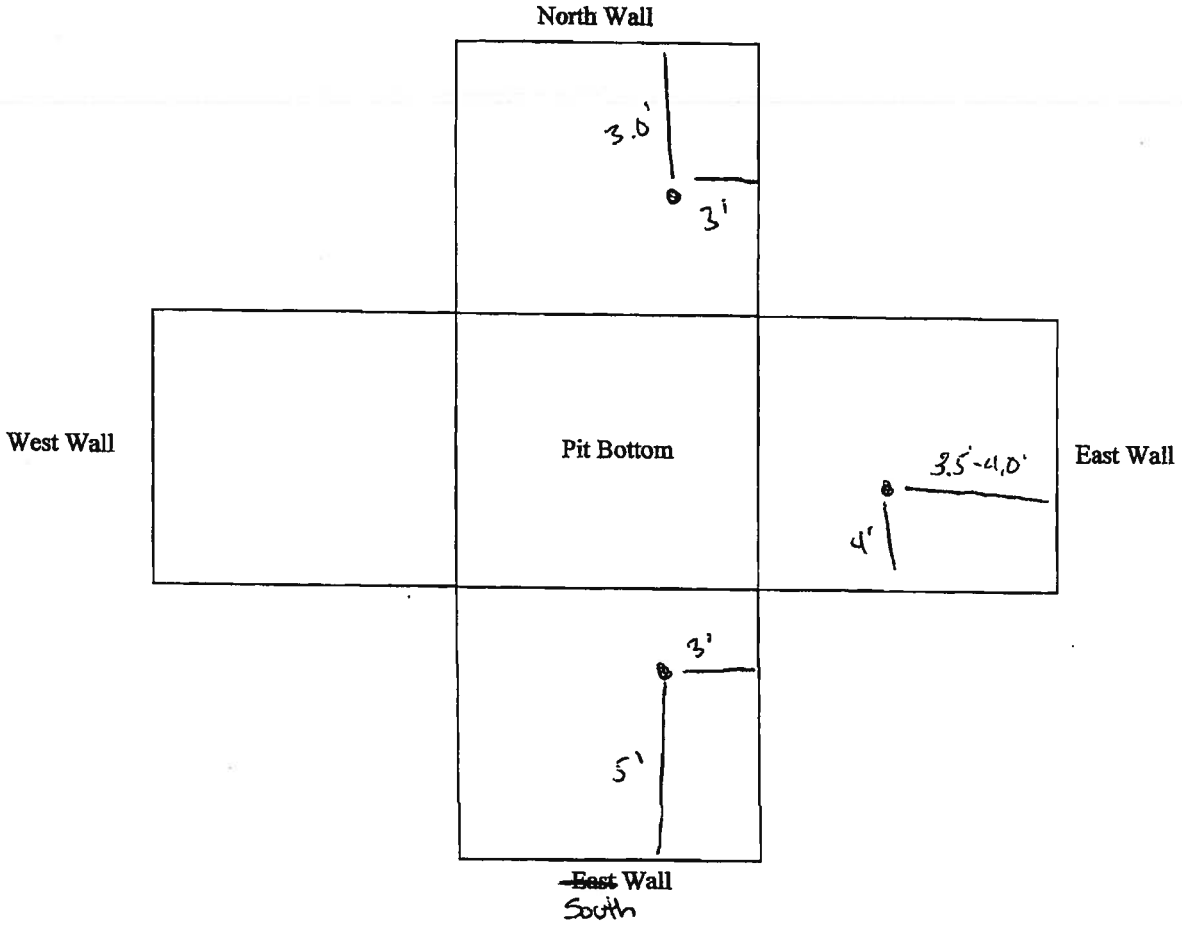
Knoxville TN 37931

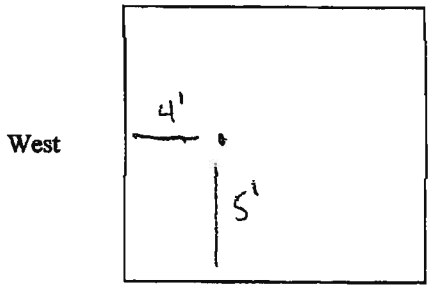
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5014TP001		

Sample Locations



Test Pit Surface
North



West

East

South

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling
Site Name		Painesville FUSRAP Site	
Date of Activity 51809			
Time of Activity			
Surveyor Name Eric Schmitt			
Sampler Name Eric Schmitt			
Media Soil			

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU14TP002	764256.775	2313427.051

	Gamma Survey Equipment GB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	2221 - 172031	2221 - 152189
Detector Serial No.	PR 277111	PR 277108

1 min static count 14991 @ Surface

Signature (Surveyor) — Date 5-18-09

Signature (Sampler) — Date 5-18-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	14789	11000	10789	Standard	PNV-SO-SU14TP002-S-51809
(Pit Bottom)	9283	8200	8606	Standard	PNV-SO-SU14TP002-BT-51809

Note 1: Surface Gamma Readings taken before test pit excavation.

ARSEC
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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU 14 TP002		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3409	3100	3010		
0.5	9364	8000	7181		
1.0	10216	8000	7829		
1.5	11276	8900	8249		
2.0	10949	9900	9517		
2.5	10200	9900	8968		
3.0	9883	9700	9542		
3.5	11527	9800	8864		
4.0	10501	10000	9361		
4.5	9880	8900	6914		
5.0	8379	8300	8259		
5.5	9578	9000	8878		
6.0	11902	9200	9358	Standard	PNV-SO-SU14TP002-NW (6.0) 51809
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5021	4500	4137		
0.5	7169	5700	4281		
1.0	9998	9000	8814		
1.5	11054	9000	8231		
2.0	10312	9900	9696		
2.5	8149	7500	7095		
3.0	8625	8200	7854		
3.5	9801	9500	9386		
4.0	9220	9000	8838		
4.5	9279	8700	8319		
5.0	9908	9100	8247		
5.5	9585	9100	8347		
6.0	9459	8900	8717		
6.5					
7.0					

ARSEC
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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5014 TP002		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4004	3700	3490		
0.5	7018	6700	6321		
1.0	8313	7000	6284		
1.5	11632	9000	8714		
2.0	10653	9000	8692		
2.5	8562	8100	7767		
3.0	9645	8700	8055		
3.5	8880	8000	7057		
4.0	8410	8100	7896		
4.5	9110	8700	8595		
5.0	9023	8500	8067		
5.5	9283	9000	8605		
6.0					
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5107	4000	3501		
0.5	7054	6500	6073		
1.0	9298	8500	8024		
1.5	11300	9000	5020	Standard	PJV-SD-5014TP002 WW-(1.5-2.0) 51809
2.0	8810	8100	6731		
2.5	8836	8300	7098		
3.0	9219	8300	7238		
3.5	10044	9000	8223		
4.0	7837	7600	7449		
4.5	9089	8600	8518		
5.0	8874	8600	8496		
5.5	9873	8700	8315		
6.0	8968	8500	7751		
6.5					
7.0					

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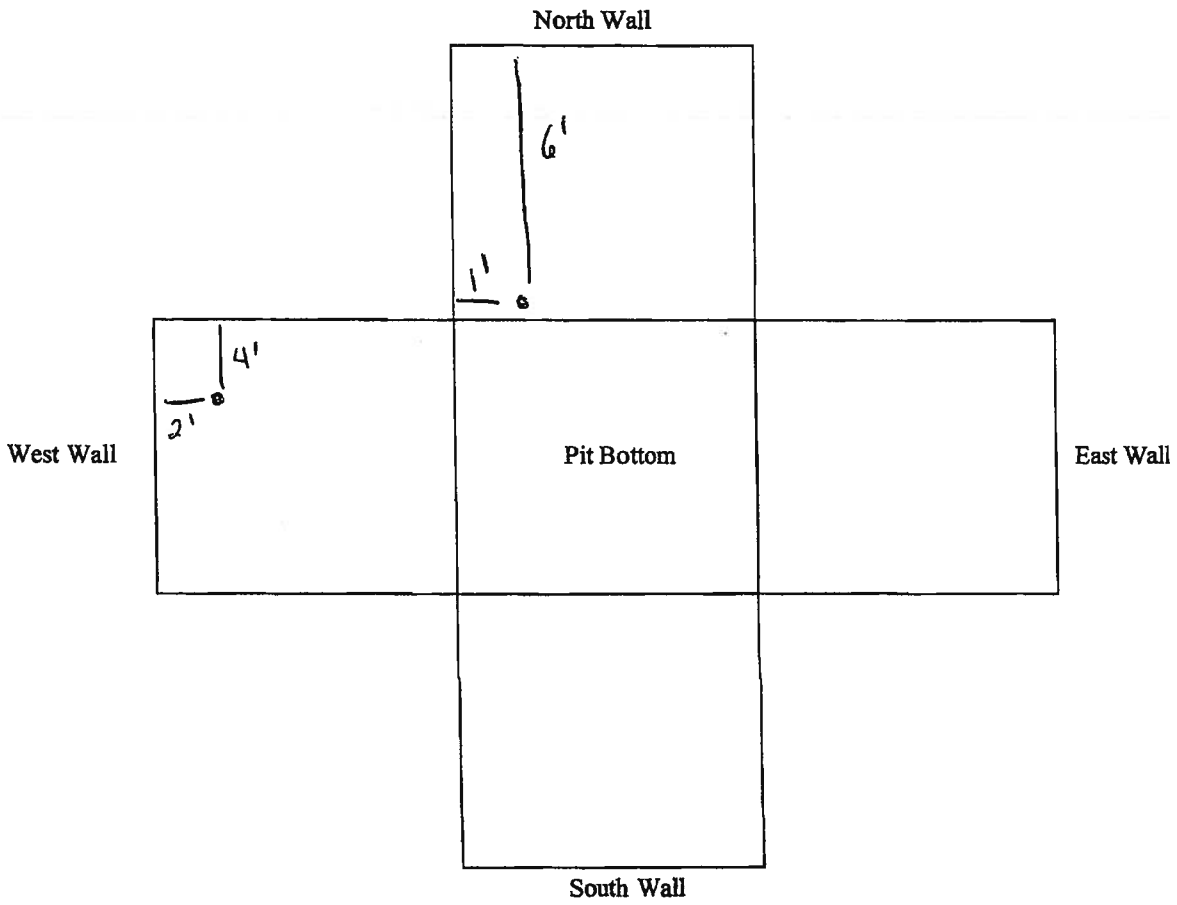
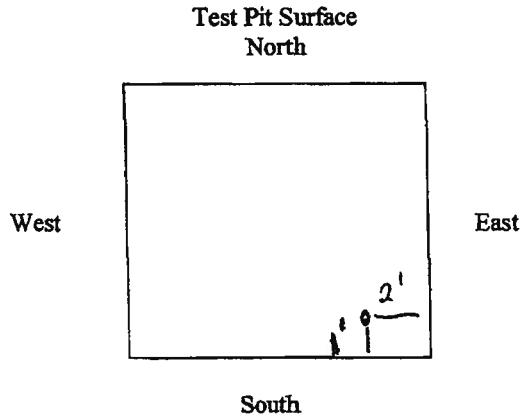
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5014 TP002		

Sample Locations





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TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	SU14 003	Painesville FUSRAP Site	
Date of Activity	5-16-09		
Time of Activity			
Surveyor Name	Damon Deville		
Sampler Name	Damon Deville		
Media			
	Test Pit No.	**Northing (NAD 1983)**	**Easting (NAD 1983)**
Location	SU14 003	764331.258	2313740.364

	Gamma Survey Equipment GB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	172031 model 2221	152189 model 2221
Detector Serial No.	PR 277111	PR 277108

1-min static count @ surface 2596

Signature (Surveyor) — Date 5-16-09

Signature (Sampler) — Date 5-16-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	2596	1800	1400	Standard	PNV-SO-SU14-TP003-S
(Pit Bottom)	10004	9000	8431	Standard	PNV-SO-SU14-TP003 BT 51609

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU14TP003		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5559	4500	4232		
0.5	6596	5700	5241		
1.0	6660	6400	6311		
1.5	7727	6300	5026		
2.0	8097	7000	6107		
2.5	7907	7500	7275		
3.0	9456	8000	~~9456~~ 6132		
3.5	8611	7000	6411		
4.0	8154	7900	7558		
4.5	8226	7900	7497		
5.0	9031	8200	7817		
5.5	9154	8700	8520		
6.0	10223	8000	7469		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4828	4500	4013		
0.5	6675	5200	4934		
1.0	7832	7400	7109		
1.5	8405	7900	7119		
2.0	9324	8300	7981		
2.5	8516	8000	7867		
3.0	9442	9200	8997		
3.5	9227	8700	8229		
4.0	9538	9000	8557		
4.5	9492	9000	8631		
5.0	10011	9000	8690	Standard	PNV-SO-SU14TP003SW(5.0-5.5) 51609
5.5	8999	8950	8903		
6.0	9601	9000	8167		
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU 14 TP003		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4031	3800	3706		
0.5	6163	5500	5106		
1.0	8005	7500	6809		
1.5	8937	7500	6930		
2.0	9401	8000	6431		
2.5	8990	8500	8000		
3.0	9231	8700	8340		
3.5	9803	9000	8026		
4.0	10025	9500	9215		
4.5	8226	7800	7497		
5.0	9031	8500	7817		
5.5	9154	8700	8520		
6.0	16223	9000	7469		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4915	4500	4300		
0.5	6504	5000	4268		
1.0	6001	5500	5163		
1.5	7881	6300	5900		
2.0	8106	7800	7359		
2.5	8703	8100	7215		
3.0	8444	8200	7922		
3.5	8998	8930	8850		
4.0	9822	9100	8800		
4.5	12710	9000	8103	Standard, MS/MSD, Field Dup., QA Split	PAN-SO-SU14TP003 WW(4.0-4.5) S1
5.0	10083	9000	8614		
5.5	9260	8700	7305		
6.0	10364	9200	9010		
6.5					
7.0					

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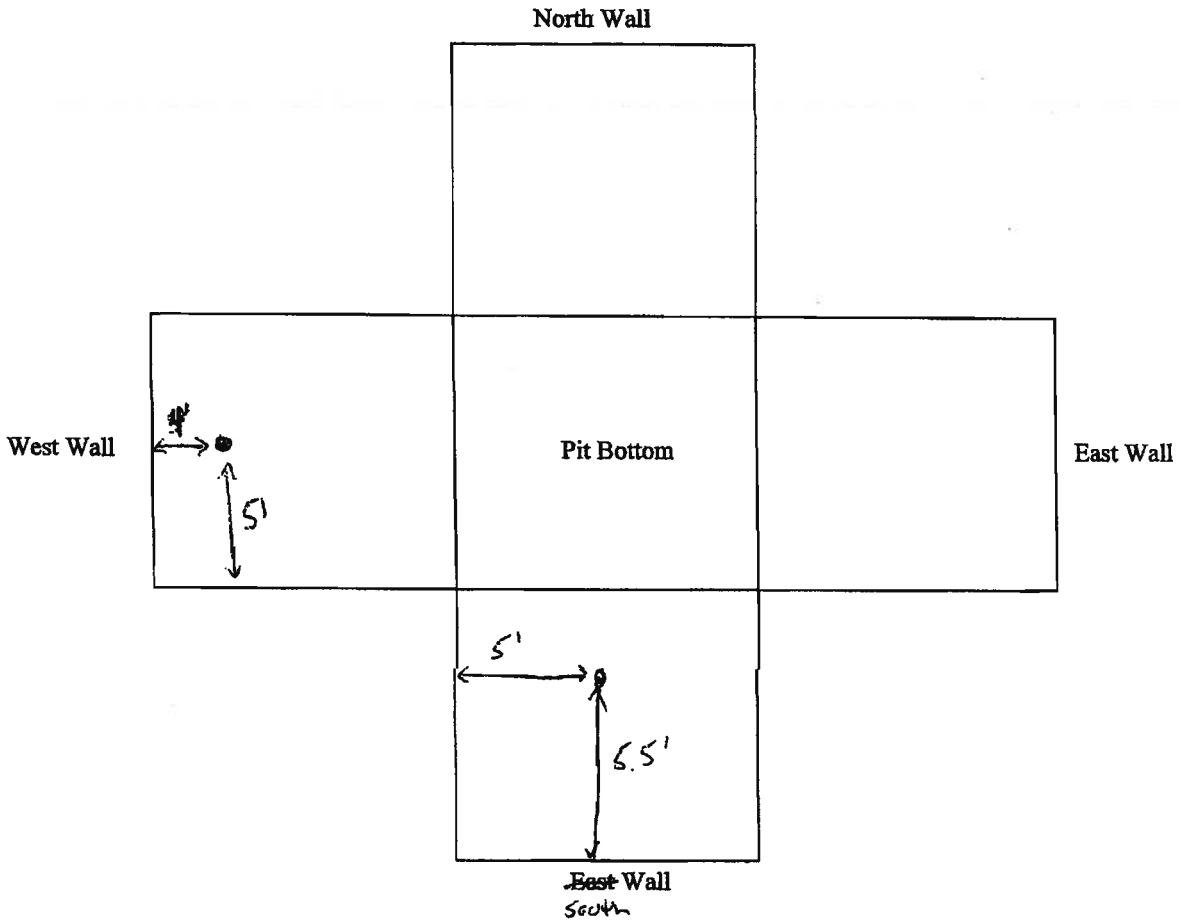
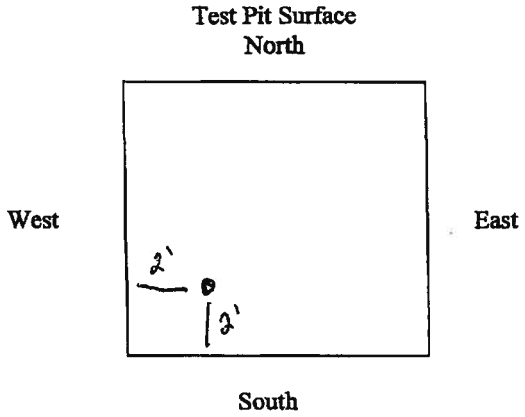
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU14TP003		

Sample Locations





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2800 Solway Rd
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TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity 5-17-09	
Time of Activity	
Surveyor Name Damon Deville	
Sampler Name Damon Deville	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location SU15	TP001	763973.861	2313532.866

	Gamma Survey Equipment	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	172031	
Detector Serial No.	PR 277111	

GB 6-3-09

1-min static count 4442

Damon D
Signature (Surveyor) — Date 5-17-09

Dam D
Signature (Sampler) — Date 5-17-09

* Note - ~~East~~ South wall concrete, Pit Bottom concrete @ 4.0 ft; unable to dig to 6.0!

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	4215	3500	3161	Standard	PNU-SO-SU15-TP001-S (5-17-09)
(Pit Bottom)	8799	7500	7842	Standard	PNU-SO-SU15-TP001-BT (5-17-09)

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5015 TP001		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4748	4500	4169		
0.5	7534	6500	5953		
1.0	9263	9000	8448		
1.5	9471	9000	8590		
2.0	8417	8000	7853		
2.5	9020	8000	7425		
3.0	9180	8900	8646		
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

* Note: Concrete wall 3.5'-4.0'

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5					
1.0					
1.5					
2.0					
2.5					
3.0					
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

* Note South wall all concrete

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5232	4800	4289		
0.5	7582	6000	5582		
1.0	11646	9700	9063		
1.5	9458	7500	6388		
2.0	8945	8100	7324		
2.5	9060	7900	6431		
3.0	9050	7900	6817	Standard, Duplicate	PNV-SO-SU15TP001 EW (2.0-3.0) 51909
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

* Concrete Floor 3.5'

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5662	5000	4256		
0.5	7843	7000	6047		
1.0	9492	8200	7886		
1.5	8979	7700	6399		
2.0	9660	7800	6761		
2.5	9355	8400	7796	Standard	PNV-SO-SU15TP001 WW (2.5) 51909
3.0	8120	7900	7483		
3.5	8922	7900	7399		
4.0	9830	9400	9145		
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

* Concrete floor 4.5'

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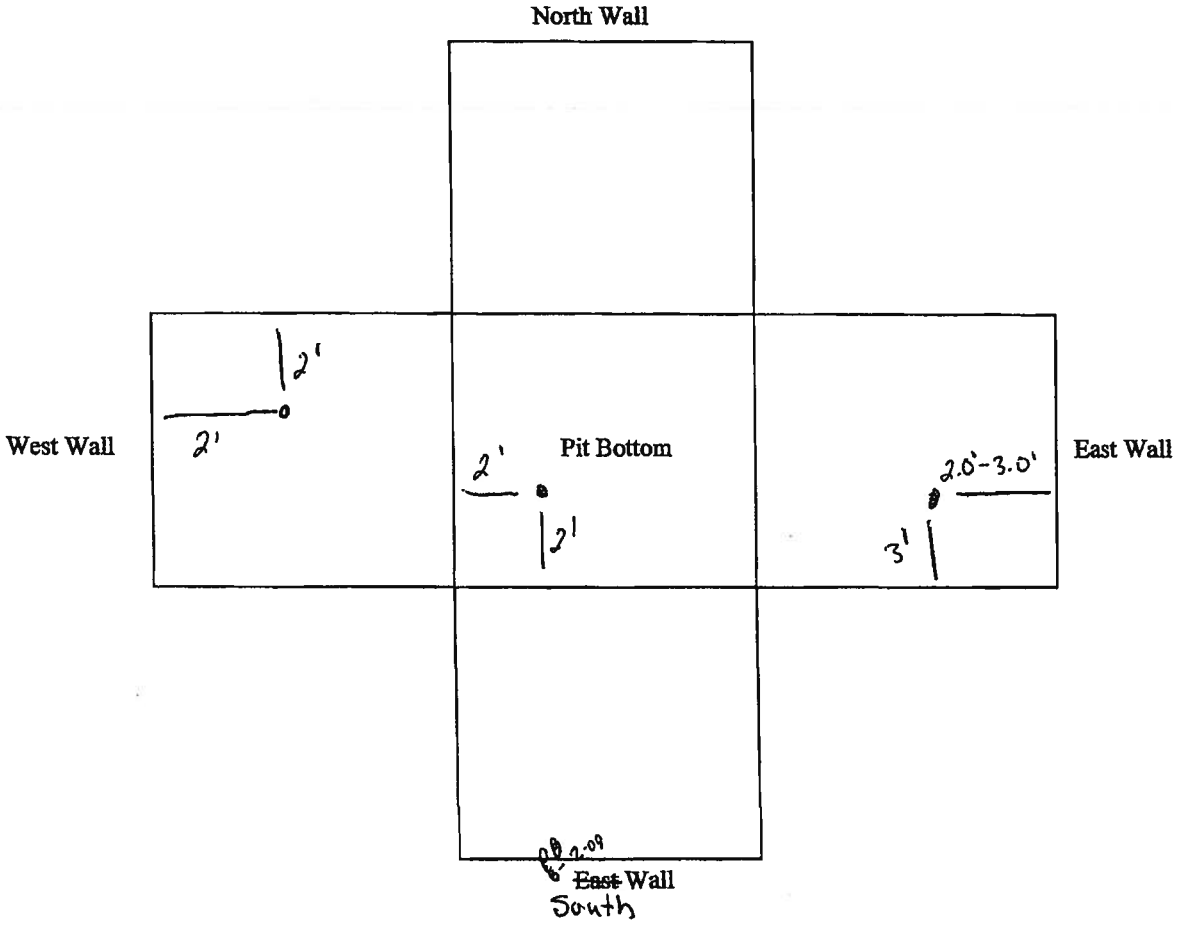
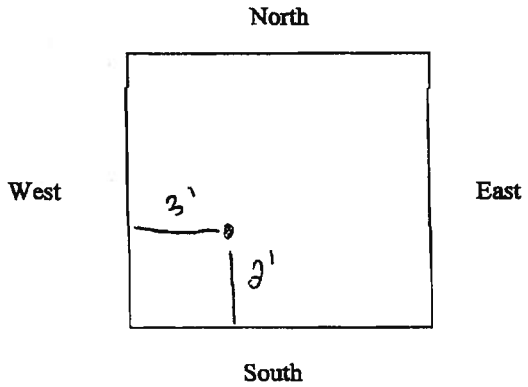
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15 TP001		

Sample Locations



Test Pit Surface



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TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name PNV	Painesville FUSRAP Site
Date of Activity 5-16-09	
Time of Activity	
Surveyor Name Damon Deville	
Sampler Name Damon Deville	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15 002	763971.861	2313740.364

	Gamma Survey Equipment GB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	172031 Model 2221	152189 model 2221
Detector Serial No.	PR 277111	PR 277108

1 min Static count 1762 cpm @ S

Damon Deville
Signature (Surveyor)

5-16-09
Date

Damon Deville
Signature (Sampler)

5-16-09
Date

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	2392	1500	1411	Standard	PNV-SO-SU15-TP002-S
(Pit Bottom)	9262	8900	8577	Standard	PNV-SO-SU15 TP002-BT-S1609 ~~PNV-S~~ SS S1609

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location 5415	TP002		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4991	4200	3630		
0.5	7357	6300	5349		
1.0	8267	7600	6872		
1.5	10752	8400	7472		
2.0	10204	9500	8605	Standard, Duplicate, QA Split	PNV-SO-SU15TP002NW(1.5-2.0)51609
2.5	10251	9300	7790		
3.0	10303	9000	8356		
3.5	10049	9100	8255		
4.0	9100	8500	8160		
4.5	8586	8300	8150		
5.0	9010	8400	7255		
5.5	8264	7700	6555		
6.0	9068	8200	7256		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4015	3500	3128		
0.5	6059	5500	4993		
1.0	8089	7700	7323		
1.5	8462	8100	7675		
2.0	8918	8500	8178		
2.5	9371	8900	8679		
3.0	9244	8600	7987		
3.5	9657	9000	8410		
4.0	9864	9000	8349	Standard, MS/MSD	PNV-SO-SU15TP002SW(3.5-4.0)51609
4.5	8403	7700	7030		
5.0	8244	7800	7341		
5.5	8884	8300	7822		
6.0	8900	8200	7221		
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15 TP002		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4399	3900	3570		
0.5	7084	6000	5134		
1.0	8920	7700	6574		
1.5	9796	9000	7946		
2.0	8914	8400	7983		
2.5	9272	8600	7986		
3.0	9735	8000	7120		
3.5	9351	9600	8743		
4.0	10003	9200	8958		
4.5	7997	6400	5764		
5.0	9643	8800	8413		
5.5	9643	8400	7894		
6.0	9216	8500	7922		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5655	4000	3151		
0.5	4320	4000	3378		
1.0	6441	5300	4816		
1.5	8042	7000	6039		
2.0	9128	8200	7503		
2.5	9357	8700	8215		
3.0	9700	8900	8215		
3.5	8903	8400	7964		
4.0	9090	8000	7352		
4.5	9519	8400	8232		
5.0	9414	8000	7636		
5.5	8881	8100	7753		
6.0	9740	8600	7568		
6.5					
7.0					

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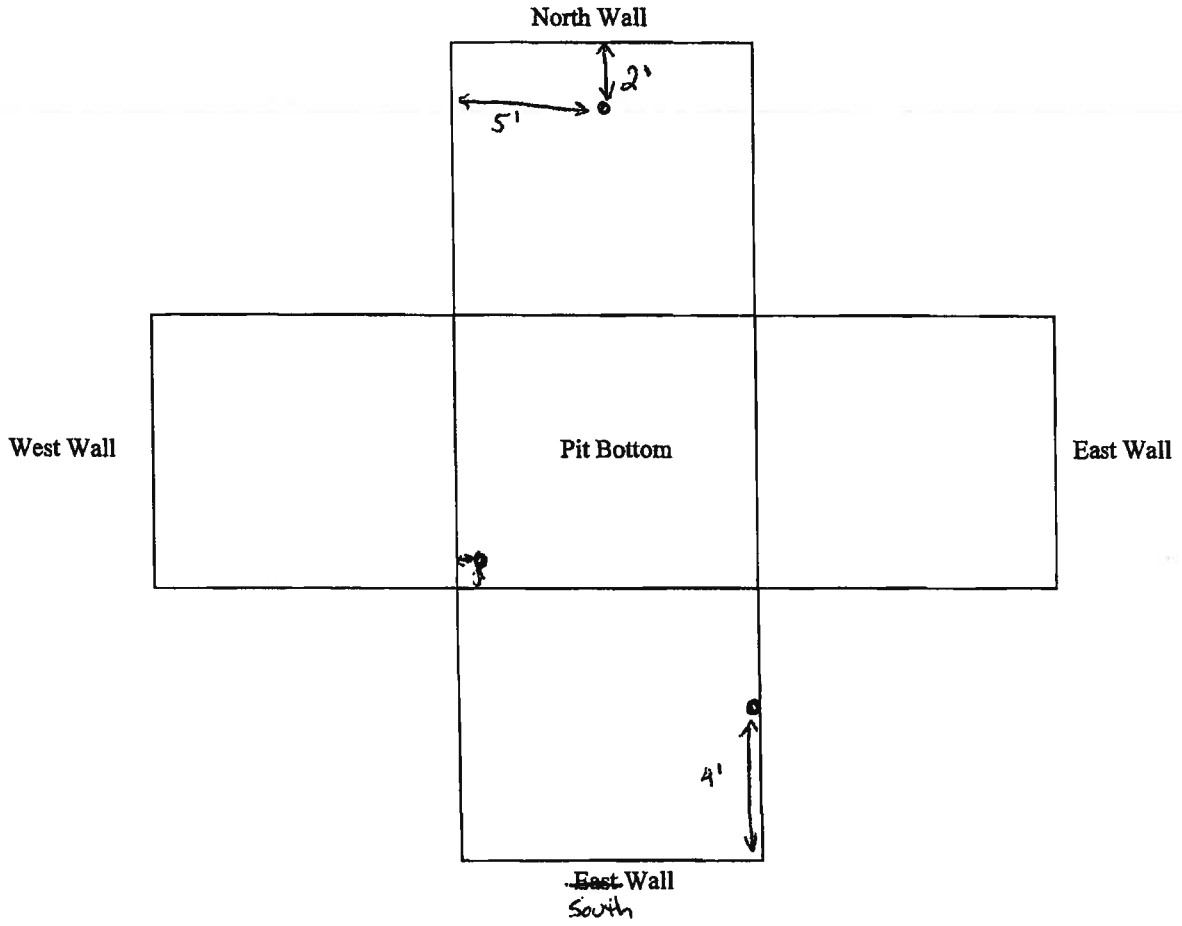
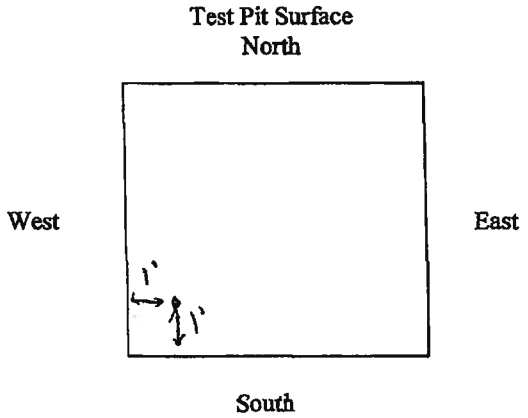
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15TP002		

Sample Locations





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TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name		Painesville FUSRAP Site	
Date of Activity	5-20-09		
Time of Activity			
Surveyor Name	Eric Schmitt		
Sampler Name	Eric Schmitt		
Media			
	Test Pit No.	**Northing (NAD 1983)**	**Easting (NAD 1983)**
Location	SU15 TP003	763927.686	2313834.704

	Gamma Survey Equipment 8B 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR 277108	

1-min static count 4581 @ Surface

Signature (Surveyor) — Date: 5-20-09

Signature (Sampler) — Date: 5-20-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	5206	4000	3907	Standard	PNV-SO-SU15TP003-S-52009
(Pit Bottom)	8997	6500	4066	Standard	PNV-SO-SU15TP003-BT-52009

Note 1: Surface Gamma Readings taken before test pit excavation.

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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15 TP003		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3895	3700	3513		
0.5	5951	5300	5172		
1.0	6375	6200	6192		
1.5	7478	6700	6382		
2.0	7804	7600	7563		
2.5	8165	7500	7103		
3.0	8331	8000	7863		
3.5	8656	8000	7738		
4.0	8469	8000	7620		
4.5	9197	8900	8300		
5.0	9935	8400	7875		
5.5	8960	8100	7964		
6.0	10592	9000	8682	Standard	PNV-SO-SU15TP003 NW (6.0) 52009
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4828	4500	4141		
0.5	8966	8000	7275		
1.0	8380	8000	7877		
1.5	8877	8000	7736		
2.0	9046	8700	8276		
2.5	8271	8000	7949		
3.0	9019	9000	8722		
3.5	8546	8000	7393		
4.0	9592	9000	8422		
4.5	8629	8000	7924		
5.0	8883	8700	8611		
5.5	9997	9600	9264		
6.0	10679	10500	10306	Standard	PNV-SO-SU15TP003 SW (6.0) 52009
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5015 TP003		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4901	4200	3995		
0.5	9196	7000	6333		
1.0	7035	7000	6861		
1.5	7914	7500	7311		
2.0	8161	8000	7706		
2.5	8150	8000	7794		
3.0	8471	8000	7587		
3.5	8055	7800	7167		
4.0	9028	8600	8353		
4.5	7560	7000	6778		
5.0	8449	8000	7790		
5.5	9926	9000	8376		
6.0	9800	9600	9303		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	6661	6100	5958		
0.5	9396	8000	7221		
1.0	9347	9000	8593		
1.5	9235	8000	7027		
2.0	9459	9000	8533		
2.5	9059	8700	8591		
3.0	9143	8000	7613		
3.5	8933	8500	8227		
4.0	8733	8200	7884		
4.5	7869	7700	7608		
5.0	8178	7900	7484		
5.5	8567	8300	8007		
6.0	9295	9100	9090		
6.5					
7.0					

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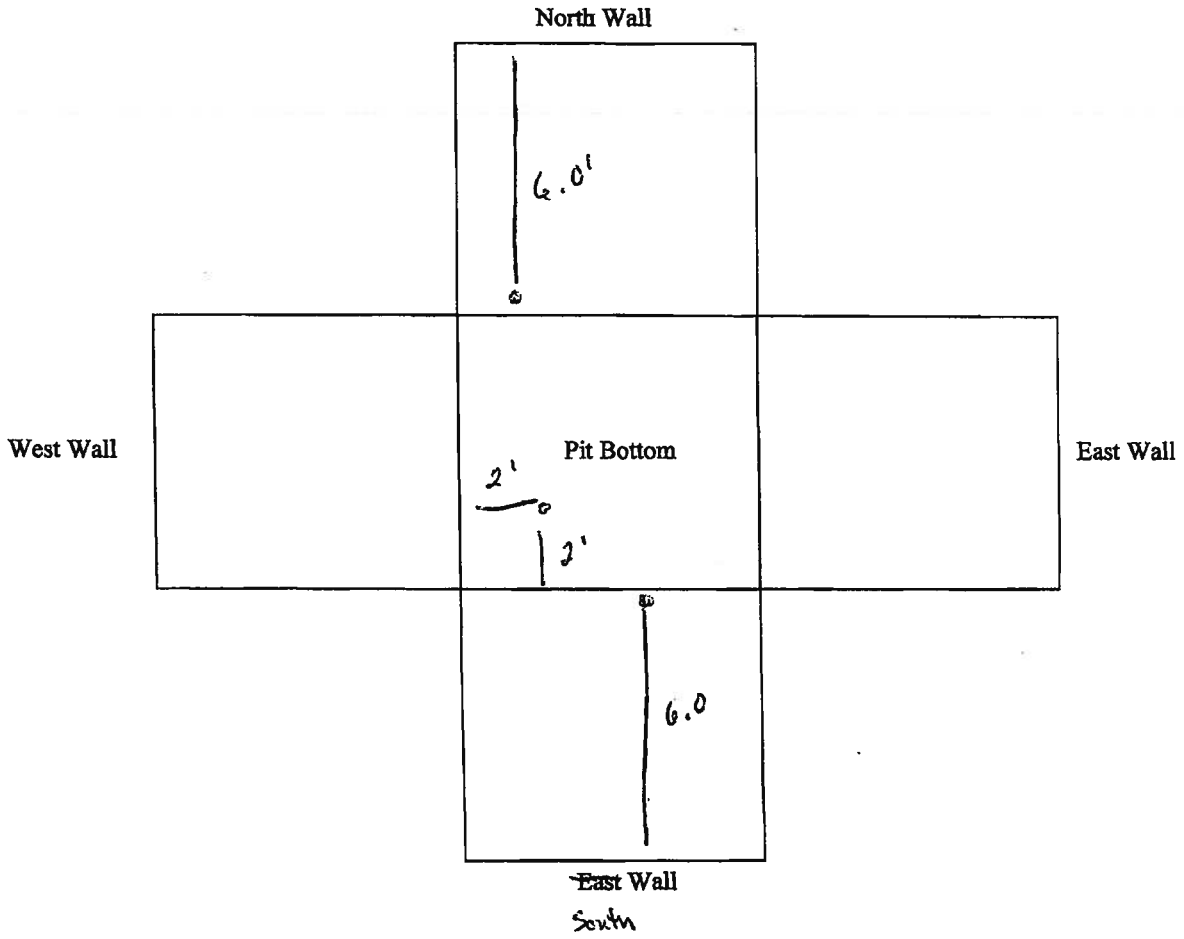
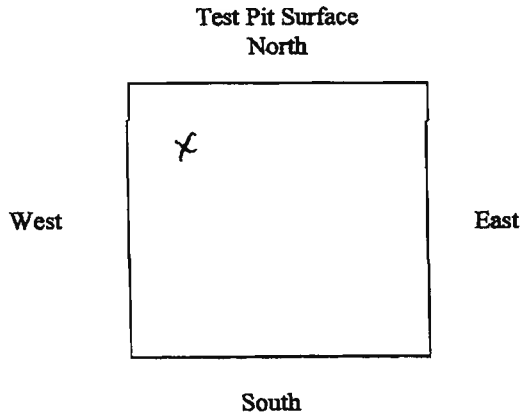
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU15 TP003		

Sample Locations





ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity	
Time of Activity	
Surveyor Name	
Sampler Name	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location SU16	TP001	764151.560	2313209.618

	Gamma Survey Equipment GPB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR 277104	

1-min Static Count @ surface 4381

Signature (Surveyor) — Date 5-18-09

Signature (Sampler) — Date 5-18-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	4381	5000	6921	Standard	PNV-SO-SU16TP001S 51809
(Pit Bottom)	10207	8500	8838	Standard	PNV-SO-SU16TP001BT 51809

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU 16 TP001		

Depth (Feet)	Test Pit ~~North~~ South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5714	5500	5460		
0.5	8390	7000	5685		
1.0	8255	7500	7281		
1.5	8061	7400	6642		
2.0	8204	7400	7270		
2.5	7443	7300	7149		
3.0	7771	7500	6906		
3.5					
4.0					
4.5					
5.0	8922	8500	8326		
5.5	8309	8000	7658		
6.0	8730	8500	8352		
6.5					
7.0					

* South wall 3.5'-4.5' concrete

Depth (Feet)	Test Pit ~~South~~ North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	6900	6500	6244		
0.5	7218	6500	5919		
1.0	7877	7000	6057		
1.5	7328	7000	6621		
2.0	8044	7400	6949		
2.5	7313	6900	6438		
3.0	8050	7500	7082		
3.5	8952	8600	8307		
4.0	9647	9000	8601		
4.5	9353	9000	8162		
5.0	9759	9300	8798		
5.5	10724	10500	10487	Standard, Duplicate	PNN-50-SU16TP001(NW) 5.5-51809
6.0	10939	10500	9826	MS/MSD, SPLIT	
6.5				QB	
7.0				6-02-09	

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU16 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5870	5000	4251		
0.5	7246	7000	6140		
1.0	8181	7700	7594		
1.5	8993	8000	7487		
2.0	7563	7200	7182		
2.5	7590	7200	7018		
3.0	8672	8000	7060		
3.5	9641	8200	7859		
4.0	9074	8500	8005		
4.5	9172	9000	8589		
5.0	9452	9000	8592		
5.5	9541	9000	8742		
6.0	9936	9500	9277		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4893	4500	4306		
0.5	5295	5000	4509		
1.0	7033	6500	6146		
1.5	8023	7700	7370		
2.0	7791	7700	7400		
2.5	6995	6500	6483		
3.0	8235	7100	6810		
3.5	8059	7700	7554		
4.0	8077	7800	7647		
4.5	8732	8500	8220		
5.0	10545	10000	9206	Standard	PNJ-SO-SU16TP001 WW(5.0) 51809
5.5	10084	9900	9721		
6.0	10077	9900	9769		
6.5					
7.0					

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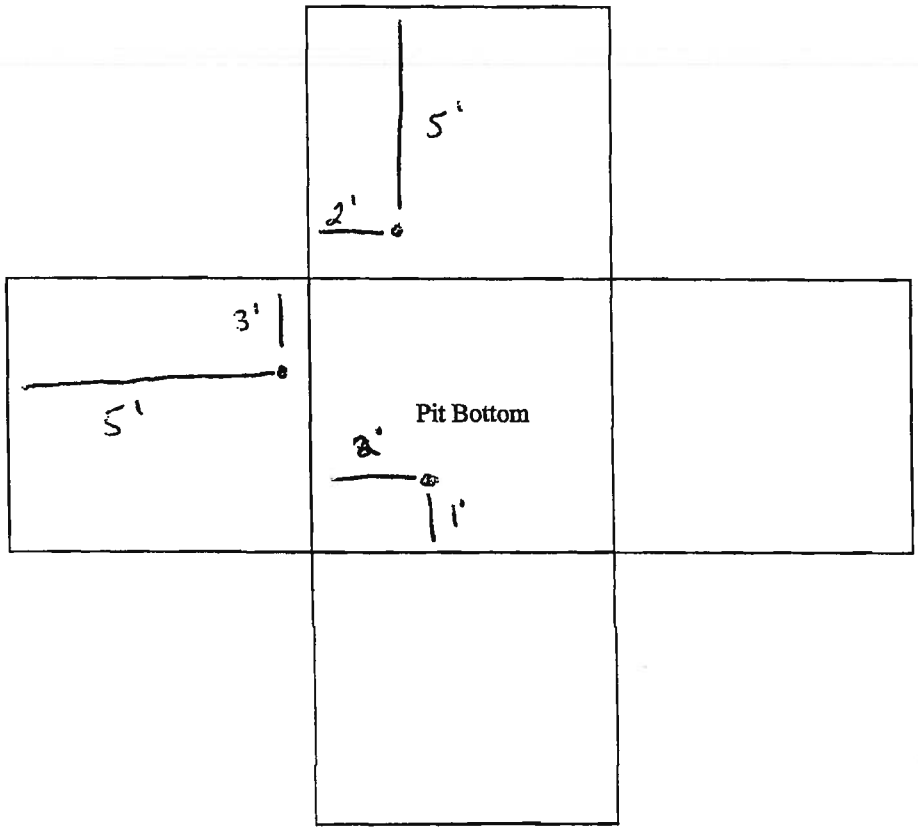
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SUK6 TP001		

Sample Locations

North Wall



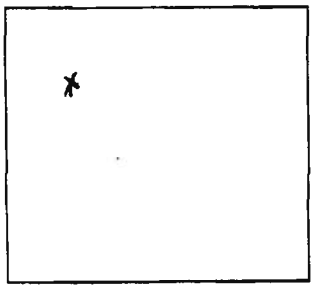
West Wall

Pit Bottom

East Wall

~~East Wall~~
South

Test Pit Surface
North



West

East

South

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity	
Time of Activity	
Surveyor Name	
Sampler Name	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location Sub	TP002	764150.971	2313319.737

	Gamma Survey Equipment		OB 6-3-09
	Instrument No. 1	**Instrument No. 2**	
Rate Meter Serial No.	152189		
Detector Serial No.	PR277108		

1-min static count @ Highest Point surface 11,930

Signature (Surveyor) — Date: 5-18-09

Signature (Sampler) — Date: 5-18-09

* Test pit moved 100' due west

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	11789	10,000	10,213	Standard	PNV-SO-SU16-TP002-S (5-18-09)
(Pit Bottom)	8649	8200	8118	Standard	PNV-SO-SU16 TP002-BT-51809

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SO 16 TP002		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3881	3500	3013		
0.5	5919	5700	5627		
1.0	6052	5700	4014		
1.5	6900	6400	6200		
2.0	7599	7000	6400		
2.5	7638	7300	7068		
3.0	7247	6900	6243		
3.5	7247	7000	6947		
4.0	7989	7400	7256		
4.5	7531	7400	7069		
5.0	7847	7800	7725		
5.5	9157	8700	8256		
6.0	9245	8700	8263	Standard	PUN-SO-SO16TP002-NW(5.5-6.0) 51809
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	6103	5000	4561		
0.5	6558	6100	5999		
1.0	6899	6800	6742		
1.5	7987	7500	6841		
2.0	8312	7500	6661		
2.5	7013	6900	6719		
3.0	7473	7200	7096		
3.5	8364	7200	6957		
4.0	8580	8000	7726		
4.5	8254	7900	6887		
5.0	9107	8500	8230		
5.5	9271	8500	8152		
6.0	8798	8500	8380		
6.5					
7.0					

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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU 16 TP 002		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	6081	5000	4596		
0.5	7272	7000	6833		
1.0	7492 ~~7899~~ ES 6/30	7400	7233		
1.5	7441	7200	7102		
2.0	7481	7200	7054		
2.5	7246	7000	6750		
3.0	7783	7300	6833		
3.5	7444	7000	6691		
4.0	7411	7000	6300		
4.5	7239	6900	6708		
5.0	7836	7400	7251		
5.5	8227	7700	7087		
6.0	8396	7900	7615		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4440	4000	3418		
0.5	6556	6400	6325		
1.0	7787	7200	6912		
1.5	7000	6900	6787		
2.0	8619	8000	7770		
2.5	6718	6700	6038		
3.0	7168	6000	5862		
3.5	7137	7000	6782		
4.0	7393	7300	7275		
4.5	7788	7300	6025		
5.0	8232	7800	7400		
5.5	8748	8100	7938		
6.0	8868	8500	8374	Standard	PXN-SO-SU16TP002 WW(6.0) 51809
6.5					
7.0					

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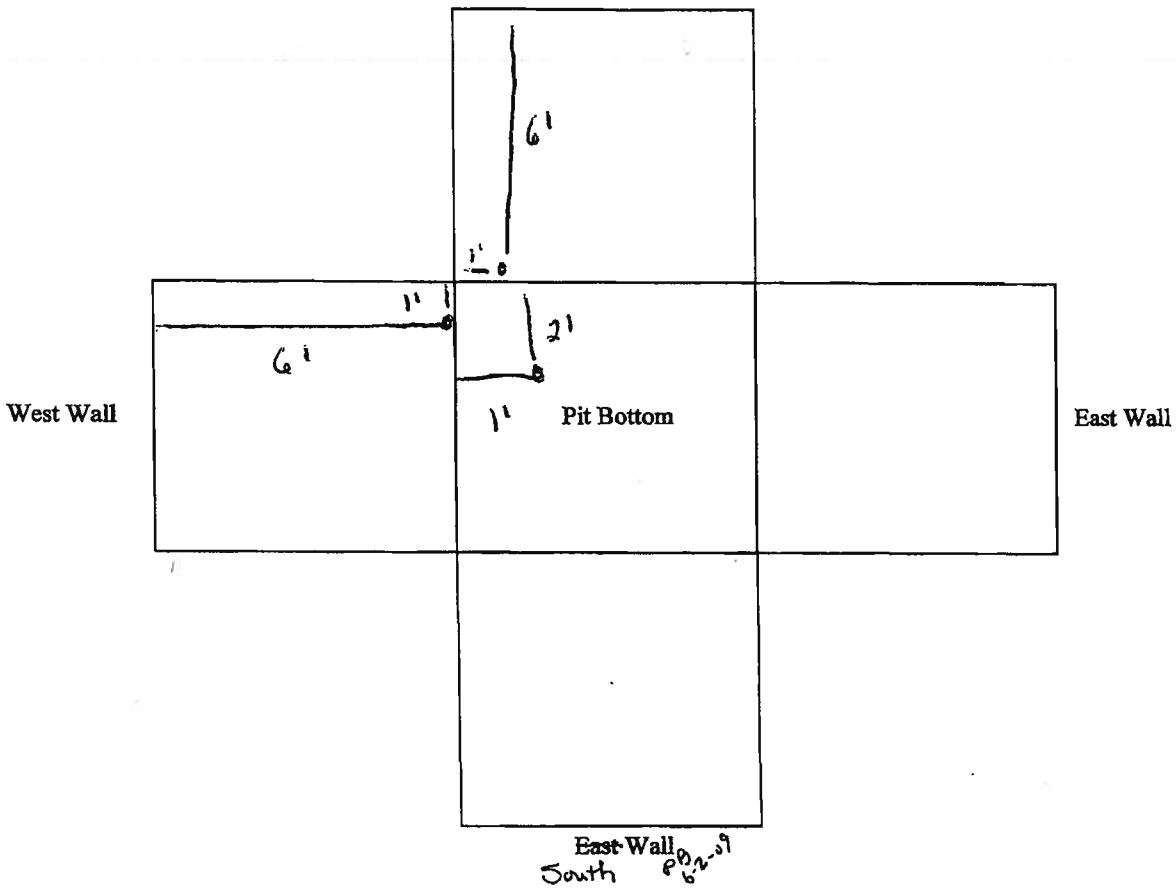
TEST PIT GAMMA AND SAMPLING LOG

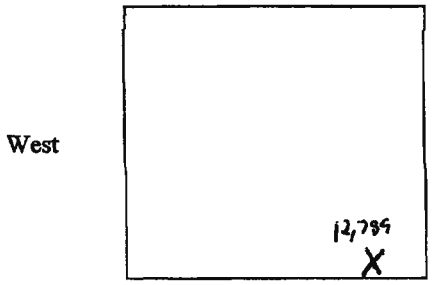
	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5016 TP002		

Sample Locations

North Wall



Test Pit Surface
North



South

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity 5-20-09	
Time of Activity	
Surveyor Name Eric Schmitt	
Sampler Name Eric Schmitt	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU18 TP001	763612.813	2313325.961

	Gamma Survey Equipment 913 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR277108	

1-min static count @ surface 4407

Signature (Surveyor) — Date 5-20-09

Signature (Sampler) — Date 5-20-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	5489	4900	3827	Standard	PNV-SO-SU18TP001-S-52009
(Pit Bottom)	10165	9000	8875	Standard	PNV-SO-SU18TP001-BT52009

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU18 TP001		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4988	4900	4820		
0.5	6309	6000	5981		
1.0	6589	6000	5732		
1.5	6637	6300	6097		
2.0	7554	7200	7070		
2.5	7614	7200	6632		
3.0	7693	7200	6975		
3.5	7385	7000	6748		
4.0	6818	6600	6031		
4.5	9811	8600	8473		
5.0	11117	9000	8793		
5.5	10843	10600	10443	Standard	PNV-SO-SU18TP001 NW(5.5) 52009
6.0	10433	10000	9945		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4820	4500	4111		
0.5	6001	5900	5405		
1.0	7689	7400	7272		
1.5	8311	8000	7518		
2.0	9194	8600	8297		
2.5	9085	8600	8278		
3.0	9416	8900	8746		
3.5	9477	9100	8995		
4.0	9986	9600	9138		
4.5	9961	9600	8874		
5.0	11794	9800	9131	Standard	PNV-SO-SU18TP001 SW(5.0) 52009
5.5	9003	8700	8189	DUP, MS/MSD, SPLIT	
6.0	10325	9800	9517	PB 6-2-09	
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU18 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5216	5000	4545		
0.5	5460	5300	5273		
1.0	6241	6000	5920		
1.5	8018	7900	7581		
2.0	7735	6900	6855		
2.5	7832	7500	7393		
3.0	7189	7000	6761		
3.5	7385	7000	6913		
4.0	8148	7800	7245		
4.5	9022	8700	8589		
5.0	8716	8400	7596		
5.5	9725	9500	9383		
6.0	10397	10100	10091		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4862	4500	4227		
0.5	5629	5200	4865		
1.0	7334	6000	5876		
1.5	7194	7000	6661		
2.0	7434	7000	6940		
2.5	7186	7000	6981		
3.0	8848	7900	7592		
3.5	8096	8000	7813		
4.0	7683	7600	7572		
4.5	8711	8500	8332		
5.0	8614	8000	7796		
5.5	9117	8900	8761		
6.0	10019	9900	9270		
6.5					
7.0					

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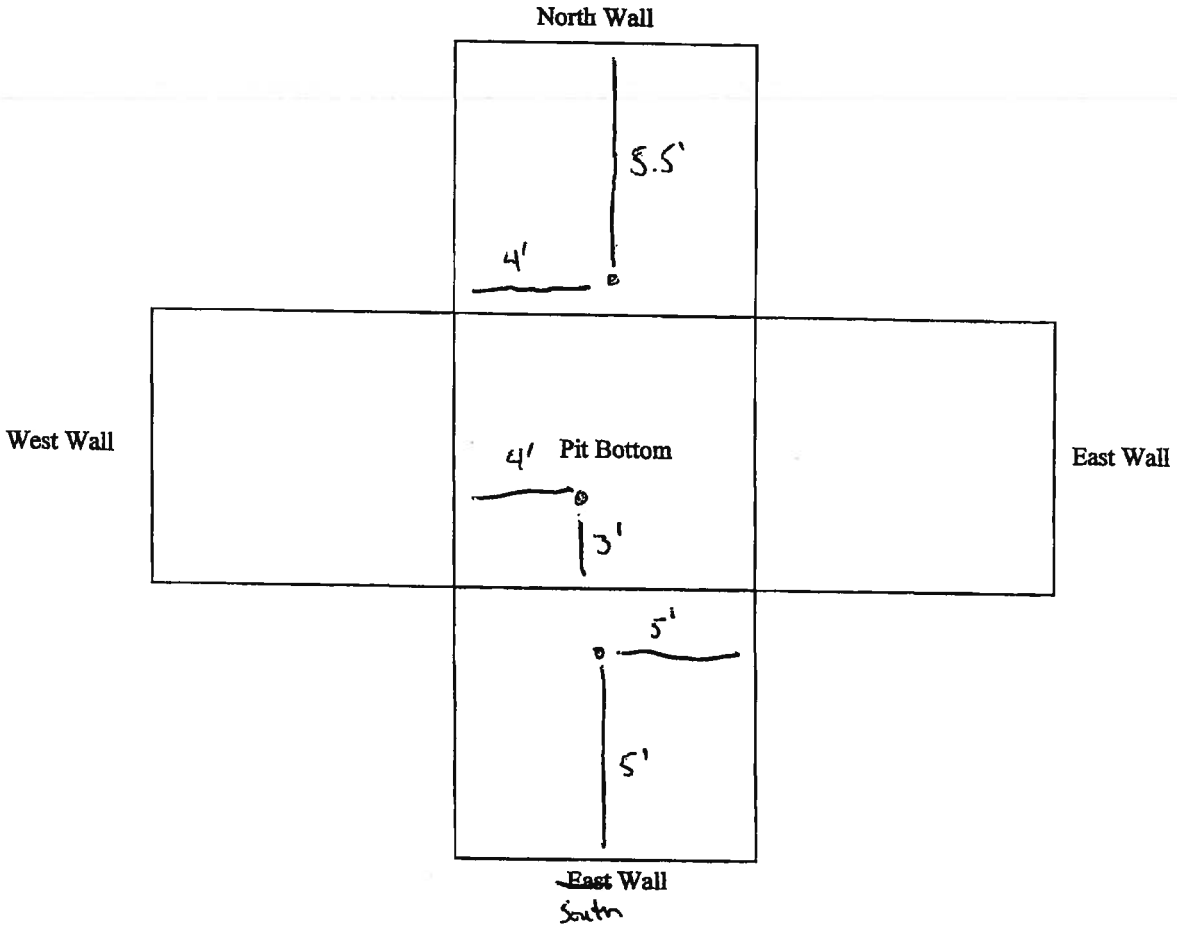
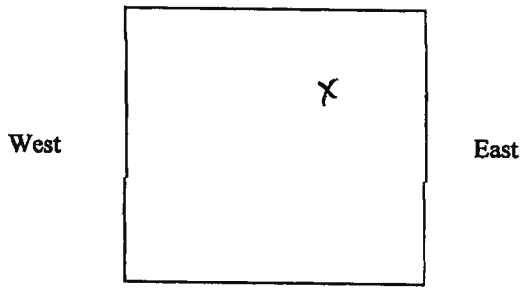
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	50 18 TP001		

Sample Locations



Test Pit Surface
North



South

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity 5-20-09	
Time of Activity	
Surveyor Name Eric Schmitt	
Sampler Name Eric Schmitt	
Media	

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU18TP002	763791.941	2313445.841

	Gamma Survey Equipment GB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR277108	

1-min static count @ surface 4200

Signature (Surveyor) — Date 5-20-09

Signature (Sampler) — Date 5-20-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	5385	4800	4200	Standard	PNV-SO-SU18TP002-S-52009
(Pit Bottom)	9246	8700	8557	Standard	PNV-SO-SU18TP002-BT 52009

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5018 TP002		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4018	3700	3276		
0.5	6955	6000	4757		
1.0	6906	6300	6144		
1.5	9354	8000	7685		
2.0	9848	8500	8224		
2.5	9715	9100	8840		
3.0	9902	9100	8339		
3.5	7917	7500	7034		
4.0	9284	9000	8733		
4.5	8659	8400	8316		
5.0	9676	9300	9171		
5.5	10726	9000	8577		
6.0	9839	9500	9253		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4211	3700	3233		
0.5	7513	6000	4714		
1.0	5354	5000	3957		
1.5	5356	5000	4759		
2.0	6300	5600	5086		
2.5	5447	5000	4271		
3.0	4342	4000	2949		
3.5	5680	5200	4194		
4.0	6567	6100	5999		
4.5	8986	8000	7535		
5.0	10766	9000	8684		
5.5	9064	8700	8248		
6.0	10061	9000	8247		
6.5					
7.0					

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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU18 TP002		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4016	3700	3267		
0.5	6672	5000	4677		
1.0	6375	5000	4838		
1.5	8126	6000	5355		
2.0	9050	7000	5718		
2.5	8010	7500	6864		
3.0	6911	6000	4001		
3.5	8610	7900	7364		
4.0	9640	8000	7792		
4.5	9203	8900	8531		
5.0	9753	9300	9144		
5.5	10954	9500	8449	Standard	PNN-SC-SU18TP002 EW (5.5) 52009
6.0	10392	9800	9127		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	6076	5000	4152		
0.5	6354	5000	4522		
1.0	6291	5800	5411		
1.5	7296	6200	5478		
2.0	8256	6600	5975		
2.5	7393	6600	5994		
3.0	6211	5700	5271		
3.5	8553	6900	6177		
4.0	9378	8700	8199		
4.5	8647	8400	8235		
5.0	10324	10000	9705		
5.5	9601	9100	8172		
6.0	10502	10100	9801	Standard	PNN-SC-SU18TP002 WW(4.0) 52009
6.5					
7.0					

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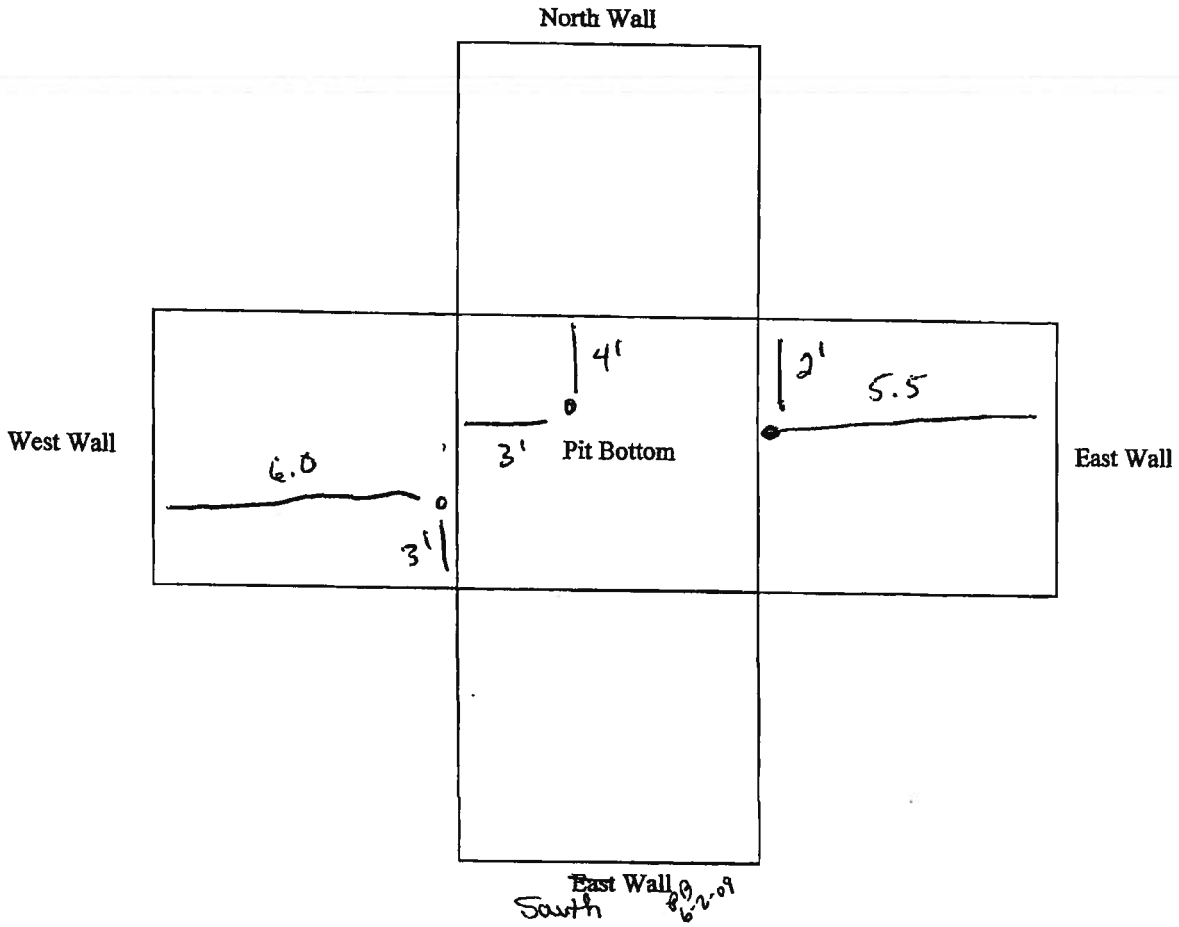
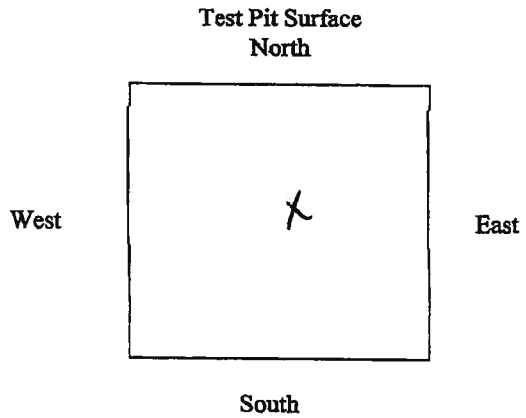
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5018 TP002		

Sample Locations





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2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name		Painesville FUSRAP Site	
Date of Activity	5-19-09		
Time of Activity			
Surveyor Name	Eric Schmitt		
Sampler Name	Eric Schmitt		
Media			
	Test Pit No.	**Northing (NAD 1983)**	**Easting (NAD 1983)**
Location	SU19 TP001	763612.464	2313532.866

	Gamma Survey Equipment OPB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR 277108	

1min static count @ surface 5916 cpm

Signature (Surveyor) — Date: 5-19-09

Signature (Sampler) — Date: 5-19-09

Depth (Feet)	**Test Pit Soil Surface and Pit Bottom Gamma Readings**			**Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)**	**Sample ID**
	Highest Reading (cpm)	**Average Reading (cpm)**	**Lowest Reading (cpm)**		
0.0 (Surface) (Note 1)	6623	6000	5745	Standard	PNV-SO-SU19TP001-S-51909
(Pit Bottom)	9607	8000	7968	Standard	PNV-SO-SU19TP001-BT-51909

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5019 TP001		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4212	4000	3803		
0.5	5664	5300	5064		
1.0	6787	6600	6400		
1.5	7440	7000	6846		
2.0	7409	7300	7224		
2.5	7370	7000	6848		
3.0	7402	7000	6729		
3.5	7692	7500	7423		
4.0	8015	7500	7062		
4.5	7791	7500	6989		
5.0	8188	7500	7092		
5.5	8601	8500	8424		
6.0	9605	9200	9027		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4629	4100	3885		
0.5	7328	7000	6477		
1.0	7946	7000	6791		
1.5	6261	6000	5460		
2.0	6949	6500	6288		
2.5	7826	7600	7451		
3.0	8039	7800	7193		
3.5	6739	6500	6170		
4.0	7503	7000	6625		
4.5	8330	8000	7656		
5.0	9388	9000	8461		
5.5	8758	8700	8670		
6.0	10120	9100	7004		
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4649	4300	4126		
0.5	6733	6200	5947		
1.0	6932	6800	6772		
1.5	8166	8000	7856		
2.0	8068	7900	7640		
2.5	7825	7500	7333		
3.0	8130	8000	7496		
3.5	6965	6500	6232		
4.0	7466	7000	6155		
4.5	7743	7300	6903		
5.0	7718	7500	7285		
5.5	13633	8500	7837	QA SPLIT, Duplicate	PNN-SO-SU19TP001 EW(5.5-6.0) 51909
6.0	9474	9000	8688	Standard MS/MSD	
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4645	4400	4236		
0.5	5497	5300	5280		
1.0	5879	5800	5712		
1.5	6294	6000	5958		
2.0	8703	8000	7290		
2.5	7824	7000	6467		
3.0	6705	6600	6405		
3.5	6749	6600	6071		
4.0	7132	6600	6325		
4.5	8226	8000	7443		
5.0	7643	7300	7189	Standard	PNN-SO-SU19TP001-WW(5.0) 51909
5.5	8535	8000	7953		
6.0	9780	9000	8641		
6.5					
7.0					

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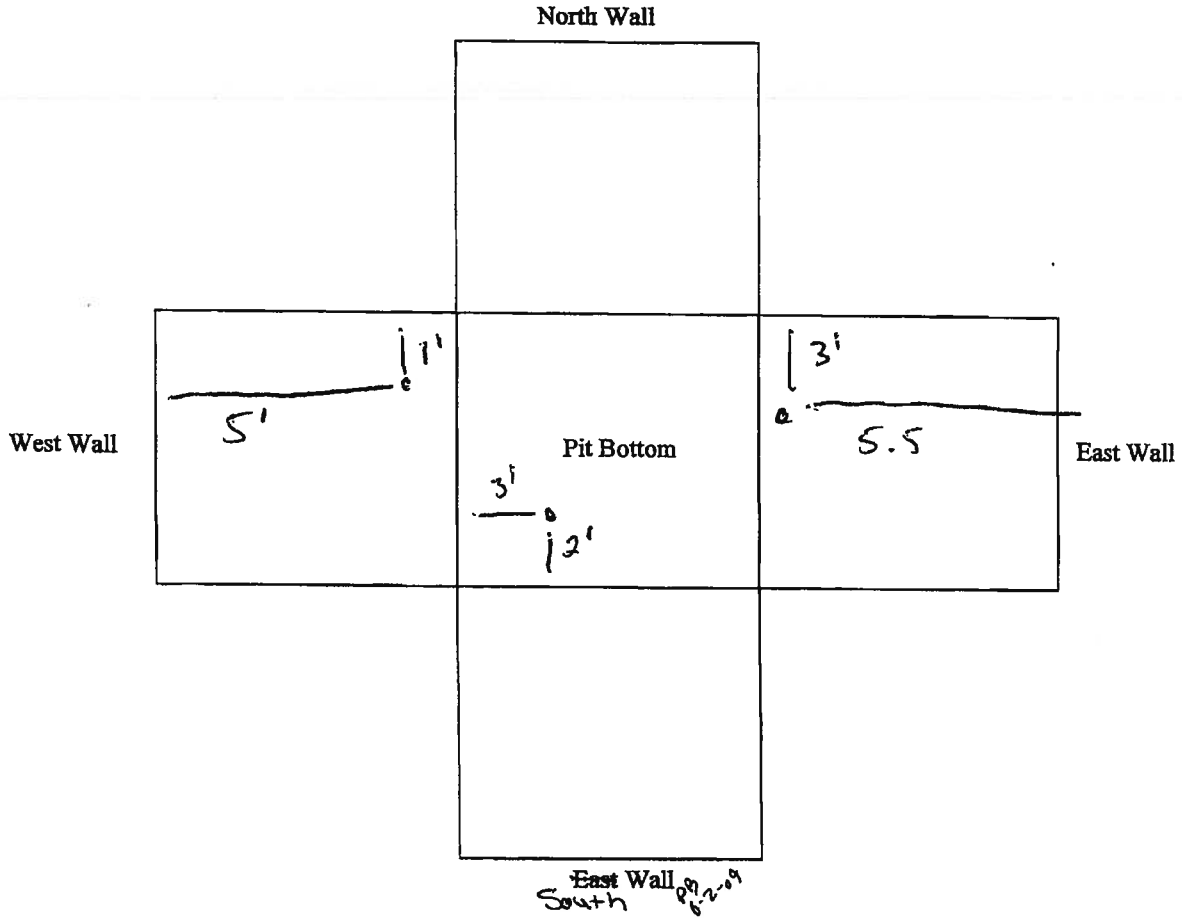
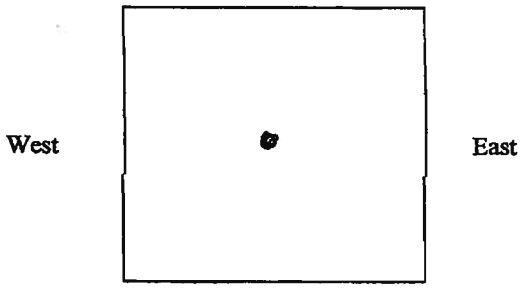
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19 TP001		

Sample Locations



Test Pit Surface
North



ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity	5-15-2009
Time of Activity	13:45
Surveyor Name	Damon Deville
Sampler Name	Damon Deville
Media	Soil

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19 TP002	763609.840	2313739.137

	Gamma Survey Equipment OB 6-8-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR277108	

Comment: 1 min. static count on test pit surface in area of highest gross gamma was 2404 cpm.

Signature (Surveyor) — Date: 5-15-09

Signature (Sampler) — Date: 5-15-09

Depth (Feet)	Test Pit Soil Surface and Pit Bottom Gamma Readings			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0 (Surface) (Note 1)	2404	1500	1314	Standard	PNV-SO-SU19-TP002-S(0.0-0.6) 51509 ~~PNV-SO-SU20-TP0~~ MK 5-15-09
(Pit Bottom)	8653	6700	5716	Standard	PNV-SO-SU19TP002BT 51509

Note 1: Surface Gamma Readings taken before test pit excavation.

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2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	5019 TP002		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5388	5000	4343		
0.5	7277	4200	3141		
1.0	6153	5100	4163		
1.5	6991	5000	4042		
2.0	7943	6200	5482		
2.5	7171	5900	3810		
3.0	8244	6200	5664		
3.5	8583	7000	6006		
4.0	8192	7100	6545		
4.5	8877	6800	6162		
5.0	8241	7000	5660		
5.5	9296	7200	6020	Standard	PNV-SO-5019TP002 NW(4.5-5.5) 51509
6.0					
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4243	3500	3190		
0.5	5099	4000	3626		
1.0	4895	4400	3346		
1.5	6139	5100	4373		
2.0	5703	5000	4348		
2.5	6467	6000	5531		
3.0	6521	5300	4975		
3.5	6971	6000	4578		
4.0	6807	6200	5823		
4.5	6637	6100	5764		
5.0	6611	6100	5565		
5.5					
6.0					
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19TP002		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3958	3500	2977		
0.5	3919	3500	3130		
1.0	4134	3500	3061		
1.5	3944	3600	3239		
2.0	4470	3900	3457		
2.5	3925	3800	3796		
3.0	4020	3600	3353		
3.5	6018	5500	4715		
4.0	6832	6100	5451		
4.5	7215	6600	5233		
5.0	7824	7100	6227		
5.5	7689	7300	5233		
6.0					
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3709	3300	3132		
0.5	4226	3900	3785		
1.0	5216	4700	4275		
1.5	6520	5700	5250		
2.0	6588	4300	3845		
2.5	6650	5500	4106		
3.0	7131	6000	4924		
3.5	7404	6300	5464		
4.0	8046	6900	6423		
4.5	8079	7400	6830		
5.0	8739	8000	7178		
5.5	9291	8500	7244	Standard	PNV-SO-SU19TP002WW(5.0-5.5)51509
6.0					
6.5					
7.0					

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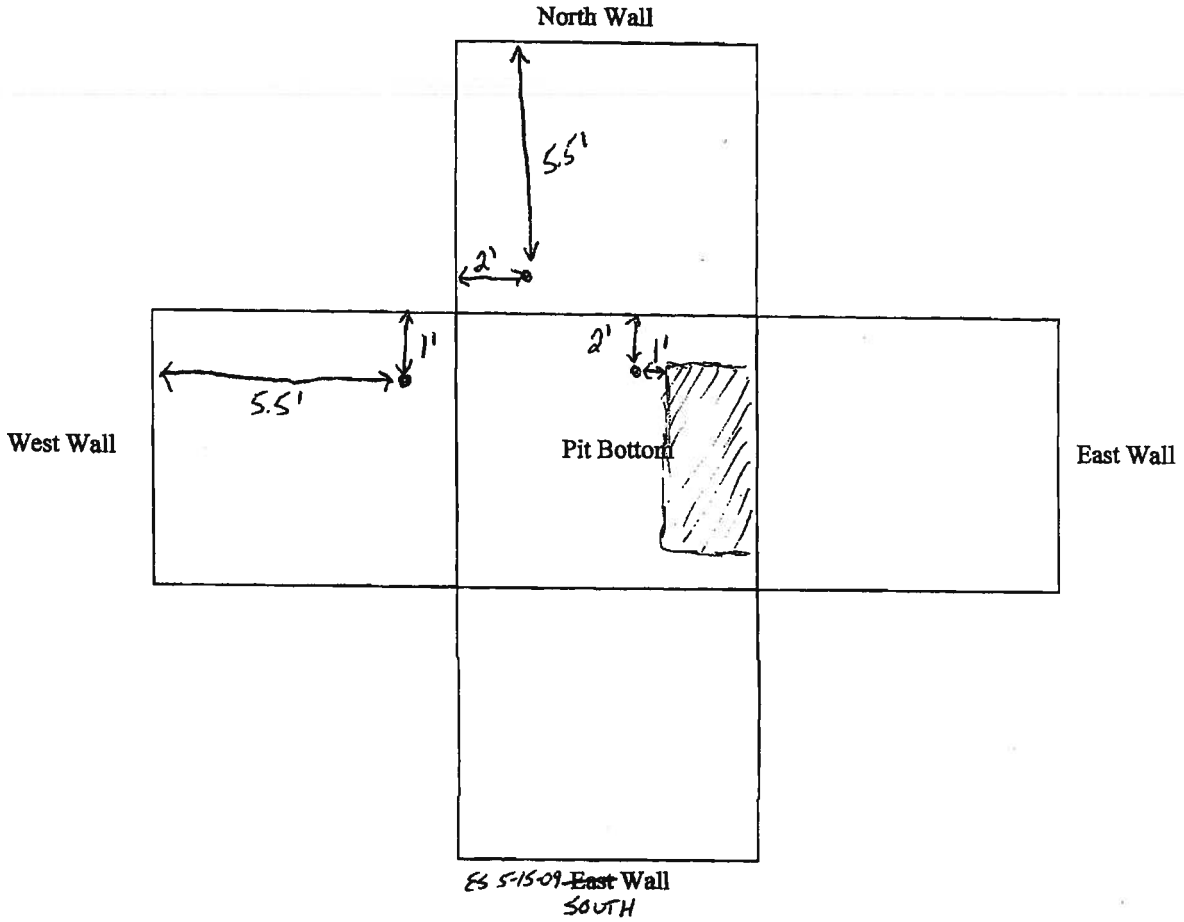
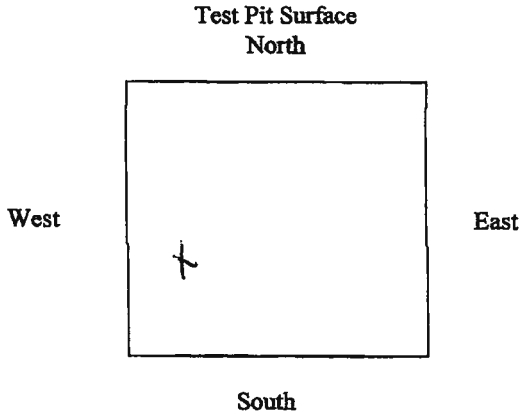
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19TP002		

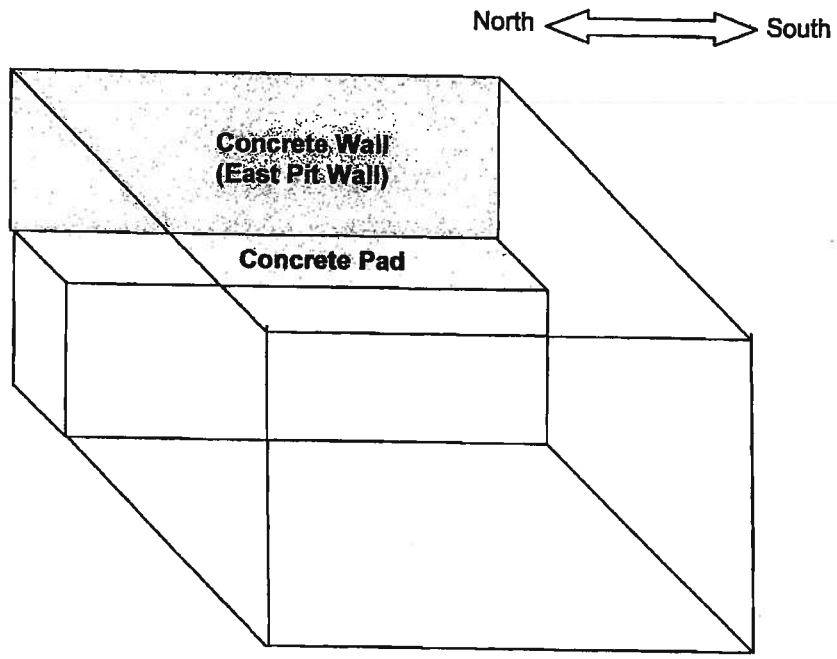
Sample Locations



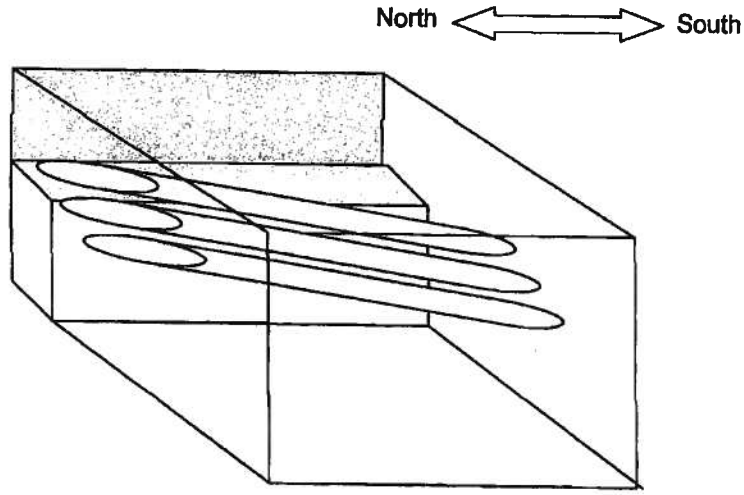


Test Pit SU19 TP002

A concrete wall was uncovered just below the soil surface on the East side of the test pit boundary. The concrete wall extended to a depth of 3.9 feet below the soil surface. A concrete pad was uncovered at the base of the concrete wall. The concrete pad extended horizontally westward for 3.8 feet (see diagram below). A backhoe was unable to break through the concrete pad.



Three 4 inch diameter clay pipes were uncovered approximately 3 feet below the soil surface. The pipes ran from the southwest corner of the test pit to the northeast corner of the test pit (see diagram below).



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2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name		Painesville FUSRAP Site	
Date of Activity	5-17-09		
Time of Activity			
Surveyor Name	Eric Schmitt		
Sampler Name	Eric Schmitt		
Media			
	Test Pit No.	**Northing (NAD 1983)**	**Easting (NAD 1983)**
Location	SU19 TP003	763792.162	2313638.615

	Gamma Survey Equipment JB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	172031	
Detector Serial No.	PR 277111	

1 min Static count: 2458

Signature (Surveyor) — Date: 5-17-09

Signature (Sampler) — Date: 5-17-09

Depth (Feet)	**Test Pit Soil Surface and Pit Bottom Gamma Readings**			**Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)**	**Sample ID**
	Highest Reading (cpm)	**Average Reading (cpm)**	**Lowest Reading (cpm)**		
0.0 (Surface) (Note 1)	2496	2000	2100	Standard	PNV-SO-SU19TP003-S-51709
(Pit Bottom)	9756	9900	10103	Standard	PNV-SO-SU19TP003-BT-51709

Note 1: Surface Gamma Readings taken before test pit excavation.

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19TP003		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3416	3100	2975		
0.5	5339	4000	3352		
1.0	5820	5600	5486		
1.5	6989	6000	5179		
2.0	7882	7500	6903		
2.5	9318	8000	7991		
3.0	13385	9200	8486		
3.5	9756	9300	8711		
4.0	10151	9700	8366		
4.5	11562	11000	10343		
5.0	15675	10000	9840	standard	PNJ-SO-SU19TP003 NW(5.0) 51809
5.5	11384	11000	10542		
6.0	11075	11000	10149		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	2733	3000	3235		
0.5	5793	5000	4099		
1.0	5853	5700	5605		
1.5	6236	5800	5687		
2.0	6918	6500	6093		
2.5	9114	8000	7379		
3.0	8073	7800	7512		
3.5	9075	8500	7924		
4.0	8969	8500	8022		
4.5	9731 ~~10234~~ 05809	9100	8754		
5.0	65 51809 ~~10410~~ 10234	10000	9725		
5.5	10410	10200	10125		
6.0	10921	10500	10044		
6.5					
7.0					

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TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU19 TP003		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3256	3100	3090		
0.5	5296	4000	3645		
1.0	5031	4600	4340		
1.5	7503	6000	5233		
2.0	7400	7300	7249		
2.5	8316	8200	8103		
3.0	9294	8700	8214		
3.5	9773	8800	8682		
4.0	9214	8800	7855		
4.5	10599	9000	8757		
5.0	11280	11000	10646		
5.5	10773	10000	9901		
6.0	11694	11000	10175		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4162	3500	2867		
0.5	5523	5000	4655		
1.0	6944	6200	5344		
1.5	8312	6000	4864		
2.0	9460	9000	8446		
2.5	9190	8700	8244		
3.0	9723	9100	8264		
3.5	9782	9200	8788		
4.0	9693	9200	8287		
4.5	11588	10000	9430	Standard	PNV-SO-SU19TP003 WW (4.5) 51909
5.0	10256	10000	9407		
5.5	10625	10400	10391		
6.0	11257	10400	10030		
6.5					
7.0					

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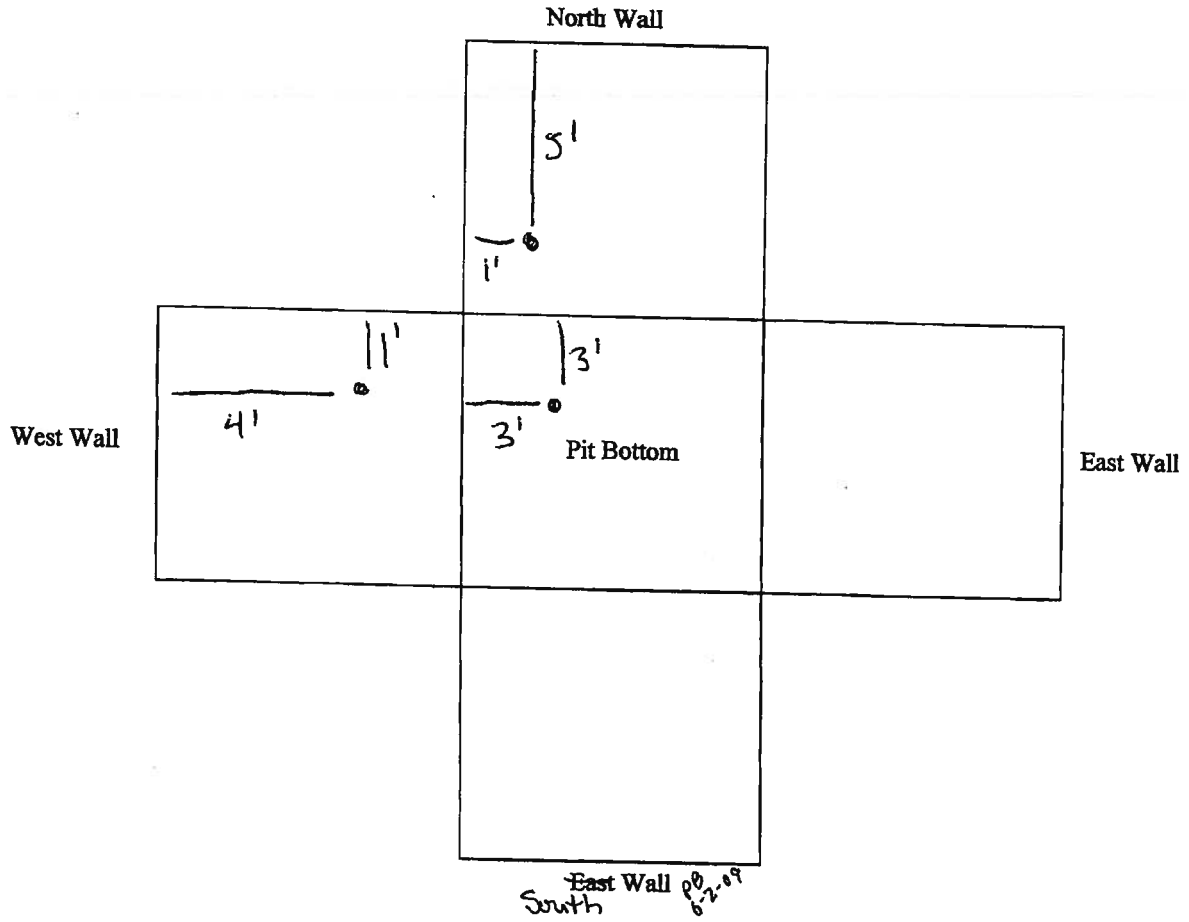
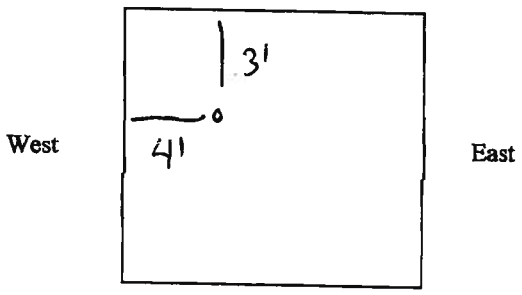
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	5019 TP003		

Sample Locations



Test Pit Surface
North



South

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name		Painesville FUSRAP Site	
Date of Activity	5-19-09		
Time of Activity			
Surveyor Name	Eric Schmitt		
Sampler Name	Eric Schmitt		
Media			
	Test Pit No.	**Northing (NAD 1983)**	**Easting (NAD 1983)**
Location	SU19 TP004		

	Gamma Survey Equipment	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR 277108	

1min static count at surface = 28066 cpm

Signature (Surveyor) — Date: 5-19-09

Signature (Sampler) — Date: 5-19-09

Depth (Feet)	**Test Pit Soil Surface and Pit Bottom Gamma Readings**			**Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)**	**Sample ID**
	Highest Reading (cpm)	**Average Reading (cpm)**	**Lowest Reading (cpm)**		
0.0 (Surface) (Note 1)	26560	22000	18848	Standard	PNV-SO-SU19TP004-S-51909
(Pit Bottom)					

Note 1: Surface Gamma Readings taken before test pit excavation.

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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location			

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5					
1.0					
1.5					
2.0					
2.5					
3.0					
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5					
1.0					
1.5					
2.0					
2.5					
3.0					
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location			

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5					
1.0					
1.5					
2.0					
2.5					
3.0					
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

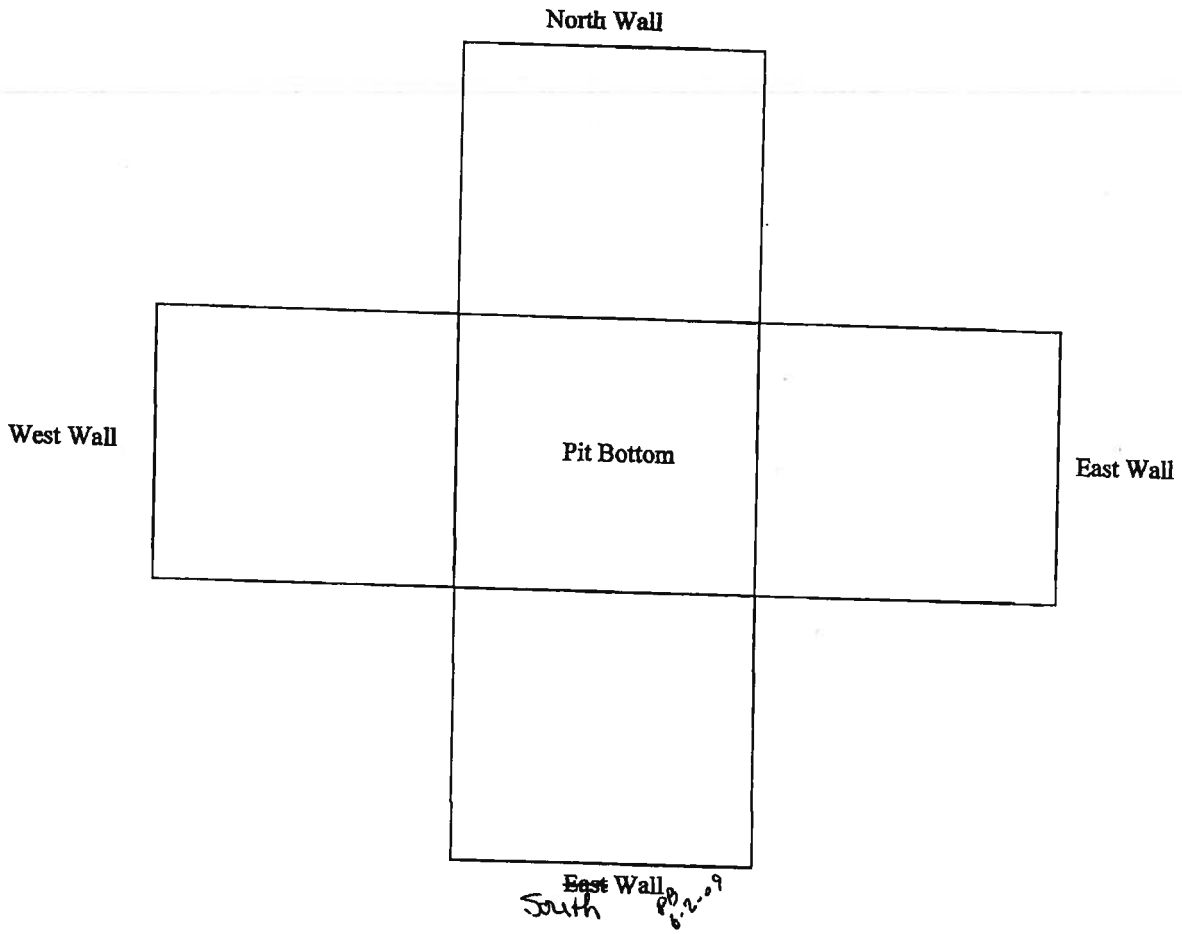
Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5					
1.0					
1.5					
2.0					
2.5					
3.0					
3.5					
4.0					
4.5					
5.0					
5.5					
6.0					
6.5					
7.0					

ARSEC
2800 Solway Rd
Knoxville TN 37931

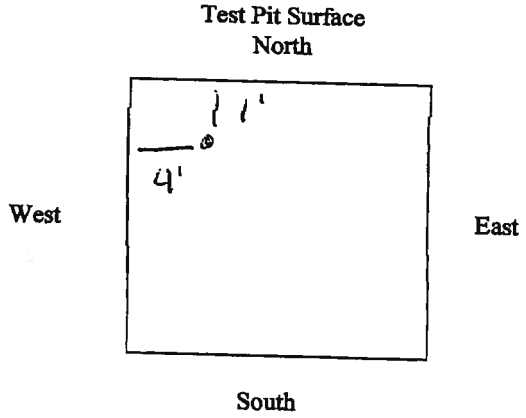
TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location			

Sample Locations



Test Pit Surface



ARSEC
2800 Solway Rd
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TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling
Site Name		Painesville FUSRAP Site	
Date of Activity	5-19-09		
Time of Activity			
Surveyor Name	Eric Schmitt		
Sampler Name	Eric Schmitt		
Media			

Location	**Test Pit No.**	**Northing (NAD 1983)**	**Easting (NAD 1983)**
	SU20TP001	763446.256	2313428.474

	Gamma Survey Equipment GB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	
Detector Serial No.	PR277108	

1 min Static count: 11533

Signature (Surveyor) — Date: 5-19-09

Signature (Sampler) — Date: 5-19-09

Depth (Feet)	**Test Pit Soil Surface and Pit Bottom Gamma Readings**			**Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)**	**Sample ID**
	Highest Reading (cpm)	**Average Reading (cpm)**	**Lowest Reading (cpm)**		
0.0 (Surface) (Note 1)	12002	10500	11023	Standard	PNV-SO-SU20TP001-S-51909
(Pit Bottom)	9352	8700	8696	Standard	PNV-SO-SU20TP001-BT 51909

Note 1: Surface Gamma Readings taken before test pit excavation.

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2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location	SU20 TP001		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3540	3300	3060		
0.5	5060	4000	3650		
1.0	4193	4000	3994		
1.5	5741	5100	4769		
2.0	5206	5000	5041		
2.5	5920	5800	5720		
3.0	7240	6000	5744		
3.5	6905	6300	6105		
4.0	7906	7400	7297		
4.5	8076	7000	6065		
5.0	9696	9000	8744	Standard, Duplicate	PNV-50-SU20TP001NW(5.0) 57909
5.5	9095	8700	7420		
6.0	10284	9000	8647		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4903	4600	4470		
0.5	6573	6200	6007		
1.0	6781	6200	5866		
1.5	7106	6500	5980		
2.0	7196	6600	6045		
2.5	7963	6600	5993		
3.0	6929	6800	6602		
3.5					
4.0					
4.5					
5.0	7482	7300	7175		
5.5	8109	8050	8014		
6.0	8806	~~8660~~ 8700	8666		
6.5					
7.0					

* Concrete SW 3.5'-4.5'

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU 20 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3913	3500	3293		
0.5	4137	4000	3488		
1.0	4304	4200	4144		
1.5	4779	4600	4573		
2.0	5268	5000	4536		
2.5	5115	4900	4666		
3.0	5775	5500	5231		
3.5	7833	7000	6417		
4.0	6794	6600	6551		
4.5	8502	8000	7741		
5.0	9259	9000	8616		
5.5	9665	9000	8311		
6.0	9641	9000	8647		
6.5					
7.0					

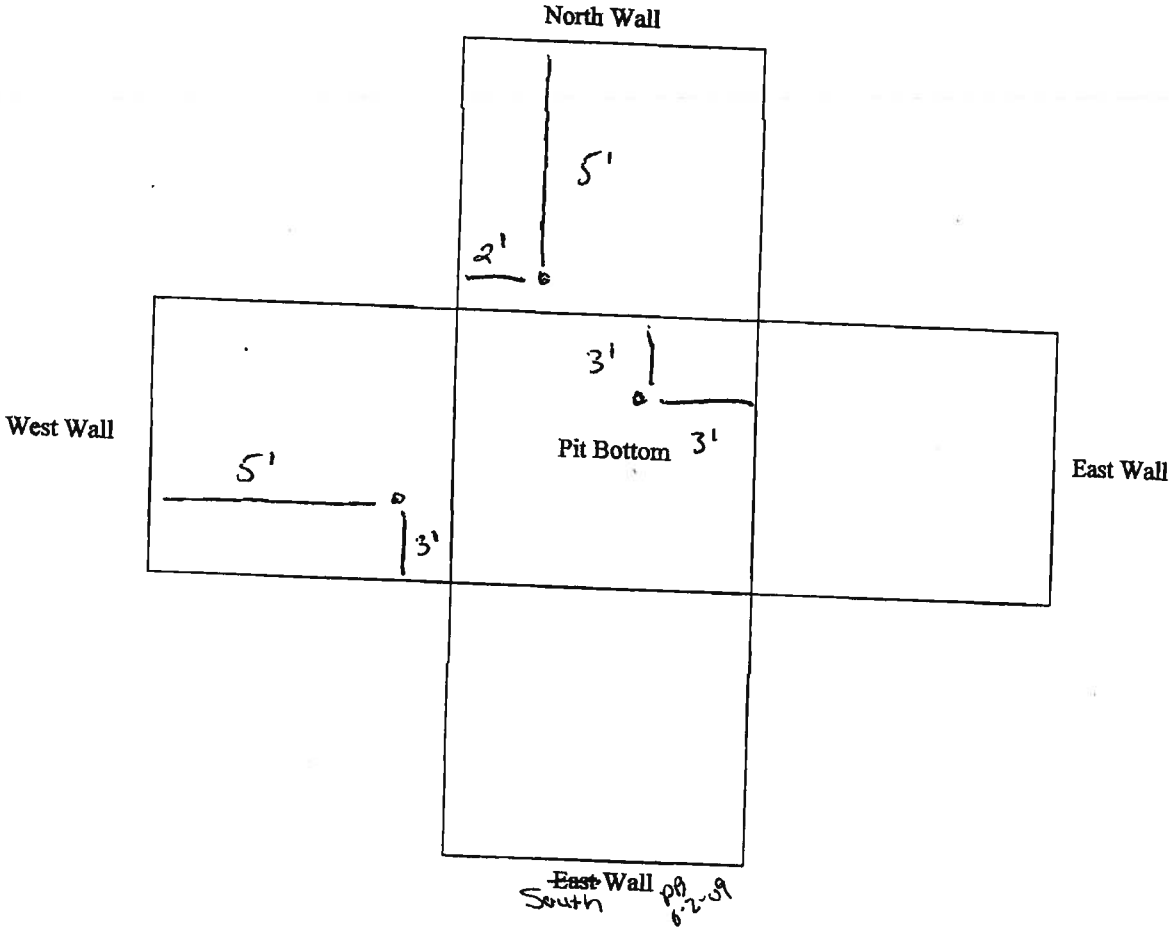
Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4060	4000	3733		
0.5	4310	4000	3606		
1.0	4481	4200	4078		
1.5	5307	5200	5002		
2.0	5636	5200	5000		
2.5	6724	6000	5658		
3.0	7527	6900	6234		
3.5	7118	6900	6543		
4.0	7706	7300	7017		
4.5	7890	7700	7580		
5.0	10099	9900	9542	Standard, Duplicate	PNV-SO-SU20TP001 WW(5.0)57909
5.5	8802	8500	8332		
6.0	9583	8000	7887		
6.5					
7.0					

ARSEC
2800 Solway Rd
Knoxville TN 37931

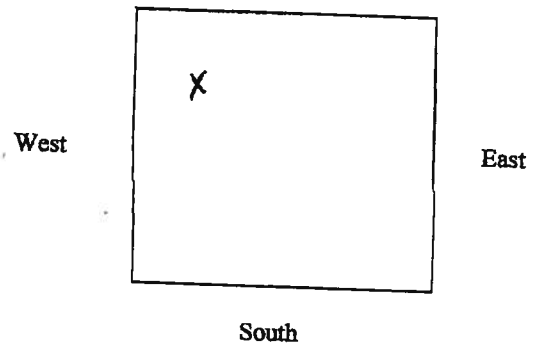
TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU20 TP001		

Sample Locations



Test Pit Surface



ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling

Site Name	Painesville FUSRAP Site
Date of Activity	5-15-2009
Time of Activity	10.10
Surveyor Name	Eric Schmitt
Sampler Name	Eric Schmitt
Media	Soil

Location	**Test Pit No.**	**Northing (NAD 1983)**	**Easting (NAD 1983)**
	SU20TP002	763328.053	2313816.488

	Gamma Survey Equipment JB 6-3-09	
	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	152189	172031
Detector Serial No.	PR277108	PR277111

Comments: 1 min static count on test pit surface in area of highest gross gamma count was 2026 cpm

Signature (Surveyor) 5-15-09 Date

Signature (Sampler) 5-15-09 Date

Depth (Feet)	**Test Pit Soil Surface and Pit Bottom Gamma Readings**			**Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)**	**Sample ID**
	Highest Reading (cpm)	**Average Reading (cpm)**	**Lowest Reading (cpm)**		
0.0 (Surface) (Note 1)	3000	1900	1363	Standard	PNV-SO-SU20TP002 (0.0-0.5)-515-09
(Pit Bottom)	12874	9000	6000	Standard QA Split	PNV-SO-SU20TP002 BT51509

Note 1: Surface Gamma Readings taken before test pit excavation.

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU20 TP 002		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5	3932	5100	6401		
1.0	6635	5500	4472		
1.5	6666	5900	5239		
2.0	7157	6400	5674		
2.5	7450	6700	5895		
3.0	7844	6700	5677		
3.5	8493	6700	5051		
4.0	9857	9000	8190		
4.5	7729	7000	6027		
5.0	8898	7200	6052		
5.5	8017	7300	7013		
6.0	12228	8500	6892	Standard/ MS/MSD	PNV-SO-SU20TP002-NW(5.5-6.0)51509
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
	ES 5-15-09		ES 5-15-09		
0.0	~~4358~~ 6354	4800	~~6354~~ 4358		
0.5	7008	4900	5903		
1.0	7703	6000	5906		
1.5	7466	6800	6637		
2.0	7420	6700	5192		
2.5	7822	7000	6277		
3.0	6695	7100	7733		
3.5	7767	7300	6939		
4.0	8194	7700	7353		
4.5	7321	6300	5526		
5.0	7110	6700	5823		
5.5	9662	8100	7737		
6.0	9197	8300	8352		
6.5					
7.0					

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU 20 TP002		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	5416	4000	3682		
0.5	7175	6500	5938		
1.0	7982	7100	6481		
1.5	7782	6300	5917		
2.0	7705	6900	6333		
2.5	8530	7400	6624		
3.0	8804	7500	7281		
3.5	8658	8000	7384		
4.0	8663	8000	7200		
4.5	7921	6700	6127		
5.0	7908	7300	6510		
5.5	8835	8300	7318		
6.0	9336	8800	8060		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0					
0.5	7246	5500	4713		
1.0	8143	6500	4860		
1.5	7948	6600	5342		
2.0	8452	7800	7200		
2.5	9109	8100	7109		
3.0	8840	6900	5391		
3.5	7561	7200	6938		
4.0	7759	6400	5285		
4.5	7875	7000	5716		
5.0	11310	6700	6469	Standard/Field Duplicate	PNV-SO-SU20TP002 WW (3.5-4.0) 51509
5.5	8383	7600	7339		
6.0	9885	8600	8165		
6.5					
7.0					

ARSEC
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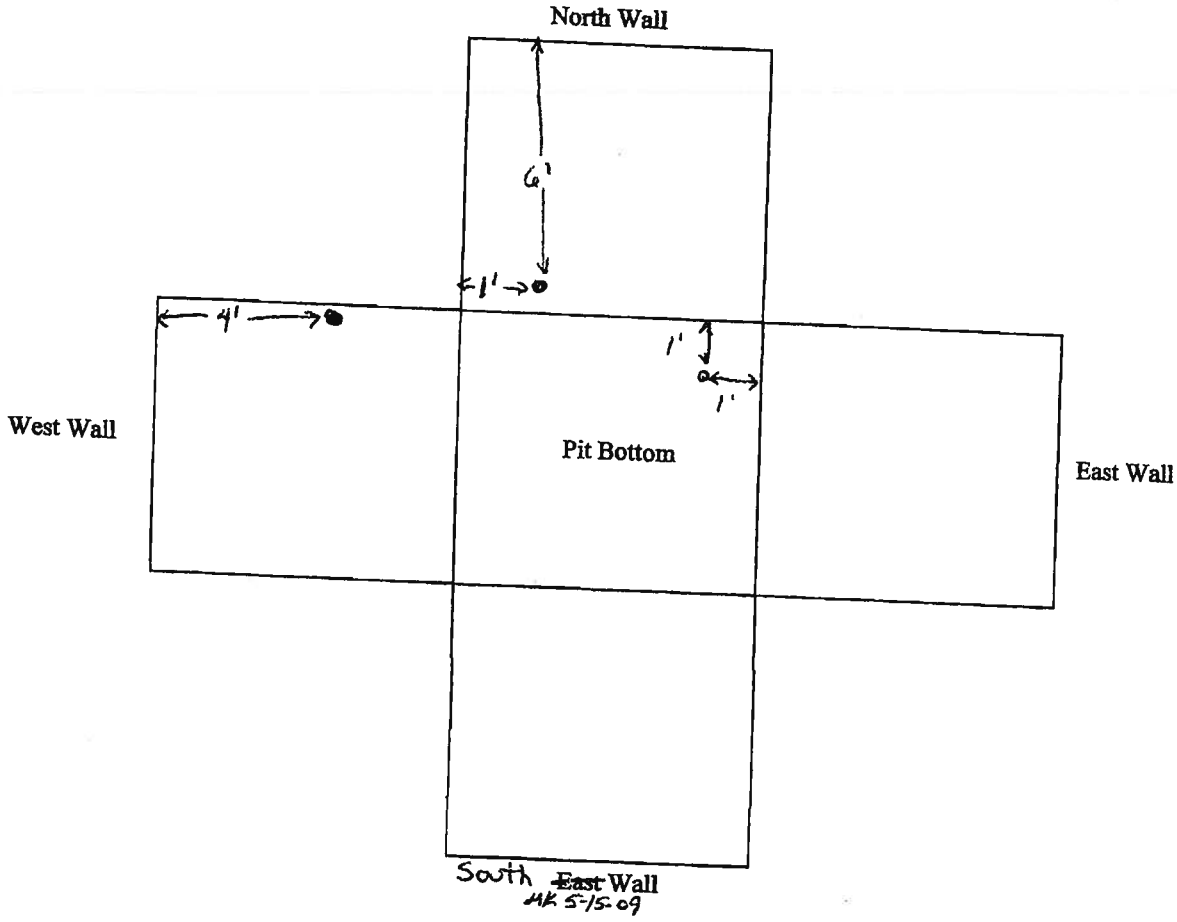
Knoxville TN 37931

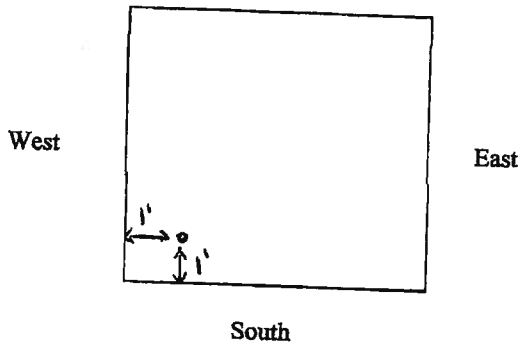
TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU20 TP002		

Sample Locations



Test Pit Surface
North



ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

TEST PIT GAMMA SURVEY AND SAMPLING LOG

Project Name:	Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling	**Task Description:**	Test Pit Gamma Survey and Sampling
Contract No:	W912P4-07-D-0009	**ARSEC Job Number:**	Federal 09-027-00003
Delivery Order:	0002	**Activity:**	Test Pit Gamma Survey and Sampling
Site Name		Painesville FUSRAP Site	
Date of Activity			
Time of Activity			
Surveyor Name			
Sampler Name			
Media			

Location	**Test Pit No.**	**Northing (NAD 1983)**	**Easting (NAD 1983)**
	Su21 001	764371.087	2313649.141

Gamma Survey Equipment GB 6-3-09

	Instrument No. 1	**Instrument No. 2**
Rate Meter Serial No.	172031 md 2221	152189 md 2221
Detector Serial No.	PR 277111	PR 277108

1 min Static count @ S 1952 cpm

Signature (Surveyor) — Date: 5-16-09

Signature (Sampler) — Date: 5-16-09

Depth (Feet)	**Test Pit Soil Surface and Pit Bottom Gamma Readings**			**Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)**	**Sample ID**
	Highest Reading (cpm)	**Average Reading (cpm)**	**Lowest Reading (cpm)**		
0.0 (Surface) (Note 1)	2081	1600	1461	Standard	PNV-SO-SU21-TP002-S
(Pit Bottom)	9541	9000	8642	Standard	PNV-SO-SU21TP002-BT 51609

Note 1: Surface Gamma Readings taken before test pit excavation.

ARSEC
2800 Solway Rd
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
Location 5621	TP001		

Depth (Feet)	Test Pit North Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3757	3300	3198		
0.5	~~4258~~ 5529	4900	4258		
1.0	6039	5500	5035		
1.5	8208	7300	6580		
2.0	8707	8500	8036		
2.5	8544	7700	6808		
3.0	8950	8000	7571		
3.5	8373	8600	7048		
4.0	8922	8300	7796		
4.5	8915	7900	7623		
5.0	9186	8000	7254		
5.5	9042	8000	7291		
6.0	8413	8000	7727		
6.5					
7.0					

Depth (Feet)	Test Pit South Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3967	3400	3103		
0.5	6466	5200	4115		
1.0	7167	6000	4137		
1.5	8749	8000	7599		
2.0	8680	8300	8009		
2.5	8668	8500	8439		
3.0	8665	8400	8213		
3.5	10088	9000	8463		
4.0	10024	9000	8620	Standard, Field Dup., QA Split	PNV-SD-SU21TP001-SW(3.0-4.0)51609
4.5	9545	9000	8219		
5.0	9181	8400	7953		
5.5	9133	8500	8141		
6.0	9652	8500	8157		
6.5					
7.0					

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Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU21 TP001		

Depth (Feet)	Test Pit East Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	3757	3500	3198		
0.5	5846	5000	4229		
1.0	7507	7000	6416		
1.5	7883	7200	6793		
2.0	8334	8150	8081		
2.5	8966	8400	7807		
3.0	9287	8500	8173		
3.5	10085	9000	8179		
4.0	9912	9800	9775		
4.5	9965	8500	8118		
5.0	9763	9000	8567		
5.5	9627	9200	8373		
6.0	9841	9500	8922		
6.5					
7.0					

Depth (Feet)	Test Pit West Wall Gamma Reading			Sample Description (Standard, Field Duplicate, MS/MSD, QA Split)	Sample ID
	Highest Reading (cpm)	Average Reading (cpm)	Lowest Reading (cpm)		
0.0	4857	4000	3048		
0.5	5073	5000	4869		
1.0	8173	7000	6823		
1.5 ES 51609	~~7463~~ 8103	7800	7163		
2.0	8383	8000	7534		
2.5	9655	8700	8258		
3.0	8954	8700	8502		
3.5	10015	8800	8295		
4.0	10507	8400	6862	Standard, MS/MSD	PNW-SO-SU21TP001-WW(3.0-4.0) 51609
4.5	9982	8700	8218		
5.0	9815	8200	7377		
5.5	9741	9000	8526		
6.0	9989	9500	8144		
6.5					
7.0					

ARSEC
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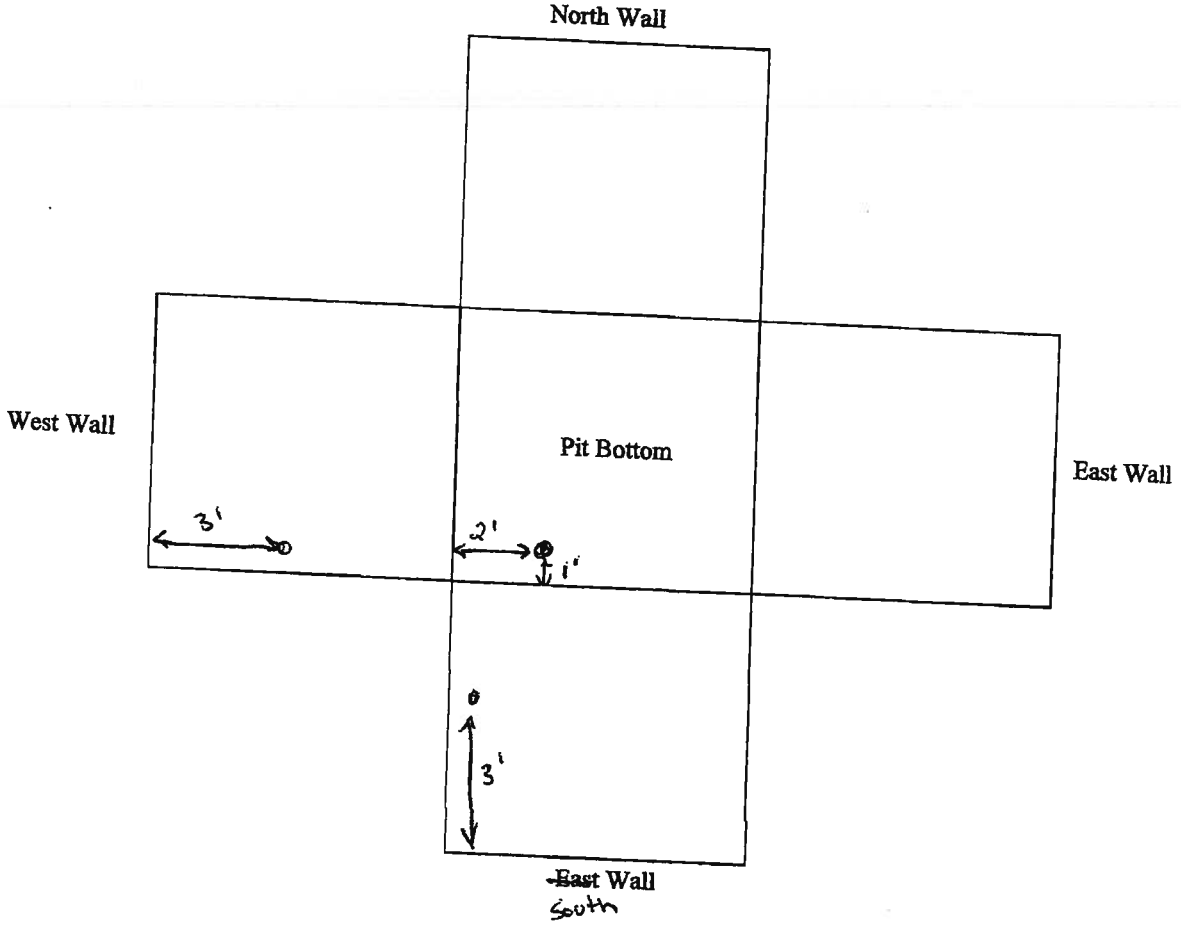
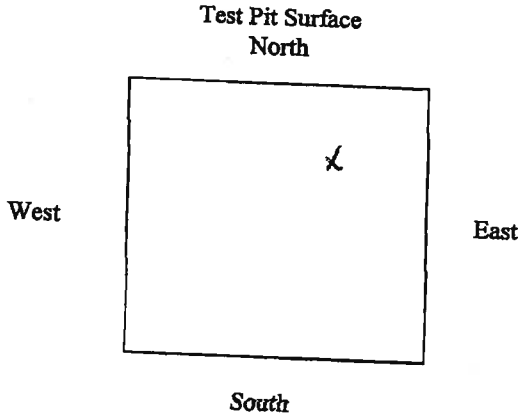
Knoxville TN 37931

TEST PIT GAMMA AND SAMPLING LOG

Location	Test Pit No.	Northing (NAD 1983)	Easting (NAD 1983)
	SU21TP001		

Sample Locations





Field Note Books

NOTEBOOK NO. 1

ISSUED TO: Damon Deville

DATE: 5-15-09

DEPARTMENT:

RETURNED:

Painesville FUSRAP Site

Painesville FUSRAP Site Pre-Remediation Volume
Uncertainty Reduction Subsurface Soil Sampling

Contract No: W912P4-07-D-0009
Delivery Order: 0002

Log Book Start Date: 5-15-09

Log Book End Date: 5-20-09

Scientific Notebook Company – www.snco.com

TITLE SU 20 TP 002 East wall

Project No.
Book No.

From Page No.

SU 20 TP002 5-15-09 12:00 pm

East wall 1 min static 2026 cpm

Depth (ft bgs)

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
5416	7175	7982	7792	7705	8530	8804	8658	8663	7421	7908	8935
4000	6500	7100	6300	6800	7400	7500	8000	8000	6700	7300	8300
3682	5938	6481	5817	6333	6624	7281	7384	7200	6127	6570	7319

6.0
9336
8800
8060

Top - Highest
middle - Avg.
Bottom - Lowest
} Readings in CPM's

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No. _____
Book No. _____ TITLE SU 20 TP002 West Wall

From Page No. ...

West wall

Depth (ft bgs)

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
	7246	8143	7948	8452	8009	8840	7561	7759	7875	11310	8383
	5500	6500	6600	7800	8100	6900	7200	6400	7000	6700	7600
	4713	4860	5342	7200	7109	5391	6938	5285	5716	6469	7337

6.0
9885
8600
8165

Top - Highest
middle - Avg
Bottom - Lowest
> CPM Readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE SU 20 TP 002 North wall

Project No.
Book No.

From Page No.

North wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
	3932	6635	6666	7157	7450	7844	8493	9857	7229	8898
	5100	5500	5900	6400	6700	6700	6700	4000	7000	7200
	6401	4472	5239	5674	5895	5677	5051	8190	6027	6052

5.5	6.0
8017	12229
7300	8500
7013	6892

Top - Highest
Middle - Avg
Bottom - lowest
> CPm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

TITLE SU 20 TP002 South wall

South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
6354	7008	7703	7466	7420	7822	6695	7767	8194	7321	7110
4800	4900	6000	6800	6700	7000	7100	7300	7700	6300	6700
4358	5403	5906	6637	5792	6277	7738	6939	7353	5526	5823

5.5	6.0
9662	9197
8100	8300
7737	8352

Top - Highest
middle - Avg
Bottom - lowest
> CPM Readings

TITLE SU 19 TP002 North wall

Project No.
Book No.

From Page No.

SU 19 TP 002 5-15-09 8:00pm

1-min Static count 2404 cpm

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5388	7277	6153	6991	7943	7171	8244	8583	8182	8977	8041
5000	4200	5100	3000	6200	5900	6200	7000	7100	6800	7000
4343	3141	4163	4042	5482	3810	5664	6016	6545	6162	5660

5.5	6.0
9296	
7200	
6020	

Top - Highest
middle - Avg
Bottom - lowest
} cpm Readings

To Page No.

Witnessed & Understood by me, Date Invented by Date

6 Project No. Book No. TITLE SU 19 TP002 South wall

From Page No.

SU 19 TP002 South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4243	5099	4895	6139	5703	6467	6521	6971	6807	6637	6611
3500	4000	4400	5100	5000	6000	5300	6000	6200	6100	6100
3190	3026	3346	4373	4348	5531	4975	4578	5823	5764	5565

5.5	6.0

Top - Highest
middle - Avg
Bottom - Lowest
> cpm readings

To Page No.

Witnessed & Understood by me, Date Invented by Date

TITLE Su 19 TP002 East Wall

Project No. ____
Book No. ____

7

From Page No. __

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3958	3919	4134	3944	4470	3925	4020	6018	6832	7215	7824
3500	3500	3500	3600	3900	3800	3600	5500	6100	6600	7100
2977	3130	3061	3239	3457	3796	3353	4715	5451	5233	6222

5.5
7689
7300
5233

Top - Highest
middle - Avg
Bottom - Lowest
} cpm Readings

To Page No. ____

Witnessed & Understood by me, | Date | Invented by | Date

Project No. _____
Book No. _____ TITLE S419 TP002 West wall

From Page No. _____

West wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3709	4226	5216	6520	6588	6650	7131	7404	8046	8079	8739
3300	3900	4700	5700	4300	5500	6000	6300	6900	7400	8000
3132	3785	4275	5250	3845	4106	4924	5464	6423	6830	7178

5.5
9291
8500
7244

Top - Highest
middle - Avg
Bottom - lowest
> CPM Readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE SU 15 TP002 North Wall 5-16-09

Project No.
Book No.

From Page No.

SU 15 TP002 North wall 5-16-09 11:00AM

1 min static count 1762 cpm

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4991	7357	8267	10752	10204	10251	10303	10049	9100	8586	8010
4200	6300	7600	8400	9500	9300	9000	9100	8500	8300	8400
3630	6349	6872	7472	8605	7790	8356	8255	8160	8150	7255

5.5	6.0
8264	9068
7700	8200
6555	7256

Top - Highest
middle - Avg.
Bottom - lowest
> CPM Readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No. ____
Book No. ____ Title: S4 LS TP002 South wall

From Page No.

South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4015	6099	8089	8662	8918	9371	9 244	9657	9864	8403	8244
3500	5500	7700	8100	8500	8900	8600	9000	9000	7700	7800
3128	4993	7323	7675	8178	8679	7987	8410	8349	7030	7341

5.5	6.0
8884	8800
8300	8200
7822	7221

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

Witnessed & Understood by me, | Date | Inve

TITLE Su 15 TP002 East wall

Project No.
Book No.

From Page No.

East wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4349	7084	8920	9786	8914	9272	8735	9351	10003	7887	9643
3900	6000	7700	9000	8400	8600	8000	8000	9200	6400	9800
3570	5134	6574	7946	7983	7986	7120	8743	8958	5764	9413

5.5	6.0
9643	9216
8400	8500
7884	7922

Top - Highest
middle - Avg
lowest.
> cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No.
TITLE 54 15 TP002

From Page No.

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5655	4320	6441	8042	9128	9357	9700	8703	9080	9519	9414
4000	4000	5300	7000	8200	8700	8700	8400	8000	8400	8000
3151	3378	4816	6039	7503	8215	8215	7964	7352	8232	7636

5.5	6.0
8881	9740
8100	8600
7753	7568

Top - highest
middle - avg
bottom - lowest
} cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

TITLE 5415 TP002 North wall

Project No.
Book No.

13

From Page No.

North Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4991	7357	9267	10752	10204	10251	10303	10049	9100	8586	9010
4200	6300	7600	8400	9500	9300	9000	9100	8500	8300	8400
3630	5349	6872	7472	8605	7790	8356	8255	8160	8150	7255

5.5	6.0
8264	9068
7700	8200
6555	7256

Top - Highest
middle - Avg
Bottom - lowest
> Readings cpm's

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No. _____
Book No. _____ TITLE Su15 TP002

From Page No. _

South Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4015	6099	8089	8662	8918	9371	9244	9657	9864	8403	8244
3500	5500	7700	8100	8500	8900	8600	9000	9000	7700	7900
3128	4993	7323	7675	8178	8679	7987	8410	8349	7030	7341

5.5	6.0
9884	8900
8300	8200
7822	7221

Top - Highest
Middle - Avg.
Bottom - lowest
> CPM Readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE Su 14 TP003 North wall

Project No. _____
Book No. _____

15

From Page No. _____

Su 14 TP003 5-16-09 4:00pm

Northwall 1-min static count 2596cpm

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5559	6596	6660	7727	8097	7907	9456	8611	8154	8226	8031
4500	5700	6400	6300	700	7500	8000	7000	7900	7900	8200
4232	5241	6311	5026	6107	7275	6132	7609	7497	7558	7817

5.5	6.0
9154	10223
8700	8000
8520	7469

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No.
TITLE SU14 TP003

From Page No.

South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4828	6675	7832	8405	9324	8516	9442	9227	9538	9492	10011
4500	5200	7400	7900	8300	8000	9200	8700	9000	9000	9000
4013	4936	7109	7119	7981	7867	8997	8229	8557	8631	8690

5.5	6.0
8999	9601
8950	9000
8703	8167

Top - Highest
middle - Avg
Bottom - lowest
} CPM Readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

TITLE Su 14 TP003 East Wall

Project No.
Book No.

17

From Page No.

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4031	6103	8005	8937	9401	9990	9231	9803	10025	8226	9031
3800	5500	7500	7500	8000	8500	8700	9000	9500	7800	8500
3706	5106	6809	6930	6431	8000	8340	8026	9215	7487	7817

5.5	6.0
9154	10223
8700	9000
8520	7469

Top - Highest
middle - Avg
bottom - lowest
} cpm Readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

SU14 TP003 West Wall

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4915	6504	6001	7881	8106	8703	8444	8998	9822	12718	10083
4500	5000	5500	6300	7800	8100	8200	8930	9100	8000	9000
4300	4208	5103	5900	7359	7215	7922	8850	8800	8103	8614

5.5	6.0
9260	10364
8700	9200
7305	9010

Top - Highest
middle - Avg
Bottom - lowest
} CPM readings

To Page No. ____

Witnessed & Understood b | Invented by | Date

TITLE SU21 TP001 Northwall 5-16-09 Project No. Book No.

19

From Page No.

SU21 TP001 5-16-09 1:00pm

Northwall 1-min static 1952cpm

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3757	5529	6039	8208	8707	8544	8950	8373	8922	8915	9186
3300	4900	5500	7300	8500	7700	8000	8600	8300	7900	8000
3188	4258	5035	6580	8036	6808	7571	7048	7796	7623	7254

5.5	6.0
9042	8413
8000	8000
7291	7727

Top - Highest
middle - Avg
Bottom - lowest
} CPM readings

To Page No.

Witnessed & Understood by me, Date Invented by Date

Project No. _____
Book No. _____

TITLE S421 TP 001

From Page No. _____

South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3967	6466	7167	8749	8680	8668	8665	10058	10024	9545	9181
3400	5200	6000	8000	8300	8500	8400	9000	9000	9000	8400
3103	4115	4137	7599	8009	8439	8213	8463	8620	8219	7953

5.5	6.0
9133	9652
8500	8500
8141	8157

Top. Highest
middle Avg
Bottom - lowest
> cpm readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE SU21 TP001 East wall

Project No.
Book No.

From Page No.

21

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3757	5846	7507	7883	8334	8466	9287	10085	8912	9965	9763
3500	5000	7000	7200	8150	8400	8500	9000	9800	8500	9000
3198	4229	6416	6793	8081	7807	8173	8179	9775	8118	8567

5.5	6.0
9627	9841
9200	9500
8373	8922

Top - Highest
middle - Avg
bottom - lowest
> cpm readings

Witnessed & Understood by me, | Date | Invented by | Date

To Page No.

Project No.
Book No.
TITLE SU 21 TP001

From Page No.

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4857	5073	8173	8103	8383	9655	8954	10015	10507	9982	9815
4000	5060	7000	7800	8000	9700	8700	8800	8406	8700	8200
3048	4869	6823	7163	7534	8258	8502	8285	6862	8218	7377

5.5	6.0
9741	9989
9000	9500
8526	8144

Top - Highest
middle - Avg
Bottom - Lowest
} cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

TITLE 3414 TP001 Northwall 5-17-09 4:00pm

From Page No. _

Northwall 5-17-09 4:00pm

1-min static count 5224

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5703	5617	8635	8365	9610	8453	8697	10039	10098	9692	10900
5137	5584	8489	8800	9899	8507	9220	10285	11636	9973	10134
5126	5513	8565	8750	9069	9619	9574	9616	10475	9181	9884
5131	6077	8201	8591	9154	10271	8438		10143	10326	
5688	6637	7816	8961	9118	10495	9333		9616		
				9885		9070				

5.5	6.0
10395	10288
10727	10500
11406	11022

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Witnessed & Understood by me, | Date | Invented by | Date

24 Project No. ____ Book No. ____ TITLE 5414 TP001

From Page No. ___

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4442	5241	7504	8073	8108	8829	9370	9486	8460	11812	9211
3881	6238	8612	7980	8229	8897	8801	10427	8510	10838	10764
4400	6573	7680	7783	7852	8201	8267	10233	9635	10018	9861
5522	7251	8001	8256	8258	8138	8327	9300	10550		
		7513	8699	8875	9622	8414	9403	10867		
				9519		8542				

5.5	6.0
10838	11671
10813	11457
10904	10853

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Witnessed & Understood by me. Date Invented by Date

TITLE S414 TP001

Project No. _____
Book No. _____

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From Page No. _

East wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4882	8145	7768	9111	9252	9581	9971	10460	10807	9836	11253
5126	7706	8865	9394	8516	9521	10653	9624	10494	10002	10826
5609	6206	7785	8763	8797	10165	9288	9566	10019	9584	10506
5835	6878	8347	8212		9764					

5.5	6.0
9833	11496
11292	10351
10416	10087

To Page No

Witnessed & Understood by me, | Date | Invented by | Date

Sk 14 XP001 Southwall

Southwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3742	7230	7769	7946	8448	9787	9337	9800	9762	9950	10755
3850	8336	8120	8293	8509	9601	9893	9876	10657	10665	10101
4508	8143	8580	8523	9140	9585	9242	9798	10216	10582	15182

5.5	6.0
10971	11405
11160	11236
12107	11455

Witnessed & Understood by me, | Date | Invented by | Date

TITLE Su19 TP003 5-17-09 5:00pm

Project No.
Book No.

2

From Page No.

Su19 TP003 5-17-09

1- min static count - 2458

North Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3309 ~~3352~~ DD	3352 ~~5621~~ DD	5621	5179	7882	7991	8486	9756	8366	11502	12160
3416 ~~4369~~ DD	4369 ~~5820~~ DD	5820	6986	7826	8338	9317	9342	9615	10846	15625
2975 ~~5339~~ DD	5339 ~~5486~~ DD	5486	6307	7187	9318	9331	8711	9655	10343	10542
				6903	9127	13385	8967	8630	10461	9840
							9494	10151		

5.5	6.0
11348	10836
10182	10149
10686	10646
10717	11075
	10835

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No. .....
Book No. .....

TITLE 5419 TP003

From Page No. _

Southwell

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
2733 ~~4094~~ PD	4094 ~~5709~~ PD	5709	6113	6090	9114	8073	8683	8022	8754	10452
3197 ~~5140~~ PD	5190 ~~5853~~ PD	5853	5687	6379	8405	7512	9075	8562	9731	9725
3233 ~~5793~~ PD	5793 ~~5605~~ PD	5605	6236	7008	8324	7764	8175	8803	9849	10234
				6914	7379	7623	7924	8606		
								8969		

5.5	6.0
10410	10044
10125	10921
10358	10750

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Witnessed & Understood by me, | Date | Invented by | Date

TITLE SU19TP003 East Wall

Project No.
Book No.

From Page No.

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3090 ~~3742~~	3742	4340	5233	7400	8103	8214	9773	8024	9555	10646
3244 ~~3645~~	3645	4701	7159	7297	8196	8625	9090	9800	9306	10920
3206 ~~3891~~	3891	4794	7503	7353	8124	8761	8682	7855	8757	11280
~~5296~~	5296	5031	6968	7249	8316	9294	9446	8930	10599	
~~4237~~	4237							9214		

5.5	6.0
10399	11130
10052	11694
9901	10175
10733	

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Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No.
TITLE 5419 TP 003

From Page No.

West wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3536	5199	5344	4864	9216	8587	8264	9615	8287	9430	10286
4162	4655	6395	7276	9460	8438	8613	9782	9504	9821	9923
2867	5523	6944	7274	9182	8244	8720	9219	9693	9981	9407
	5375	6671	8187	9170	9190	9723	8788	8708	11588	
	5091	7393	8296	9013	9004	8468	9438	8794		
			8312	8446	8598	9298	9711			

5.5	6.0
10544	11257
10391	11021
10625	10925
10606	10030
10499	

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Date

TITLE 5415 TP001 5-17-09 Project No. Book No.

31

From Page No.

5415 TP001 5-17-09 2:30pm

South wall (all concrete) 1-min static count 4442

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Witnessed & Understood by me, Date Invented by Date

32 Project No. _____ Book No. _____ TITLE SU 15 TP001

From Page No. __

North wall

0	.5	1.0	1.5	2.0	2.5	3.0
4169	7505	8921	9471	8407	8626	8646
4748	7534	9263	8590	7953	7425	9180
4644	5953	8448	8624	8160	9020	

Concrete looking from 3.5 - 4++

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Witnessed & Understood by me, | Date | Invented by | Date

TITLE

Project No.
Book No.

33

From Page No.

Su 15 TP001

West wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
4256	7843	7886	8979	7933	9355	8120	8922	9870
4966	7046	9492	6575	9660	7796	7651	8544	9145
5662	6047	8211	6399	6761	7868	7483	7399	9160

Witnessed & Understood by me, | Date | Invented by

Project No. _____
Book No. _____ TITLE _____

From Page No. __

S4 15 TP001

East wall

0	.5	1.0	1.5	2.0	2.5	3.0
5232	5582	8063	6388	7324	6451	6847
4289	6825	8610	8949	8945	7383	8003
4654	7582	11646	9458	7910	8060	8050

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Witnessed & Understood by me, | Date | Invented by | Date

TITLE 5414 TP002 5-18-09 11:00am

Project No.
Book No.

From Page No.

5414 TP002 5-18-09 11:00am

1-min static count
14441

North wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3010	7181	10216	8244	9517	10200	9883	10553	9361	6914	8259
3340	6423	7829	9707	9929	8968	8543	11527	10501	9880	8355
3409	8553	9411	11276	9258	9382	9542	10439	9610	8483	8379
3125	9364	9381	8917	9871	9243	9705	8864	9906		
			10105	10949						

5.5	6.0
8541	11902
9578	9358
8878	9956

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Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No.
TITLE S4 14 TP002 west wall

From Page No.

west wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3501	6776	8024	11300	6731	7098	9219	10044	7449	9089	8874
4392	6866	8204	5020	8810	7342	9003	8551	7837	8518	8873
5107	7054	8316	7633	8733	8836	7753	8857	7612	8780	8496
4445	6073	9298	9247	8787		7738	8223			
			9419	7651						

5.5	6.0
8712	8828
8315	7751
9873	8968

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Witnessed & Understood by me, | Date | Invented by | Date

TITLE SL14 TP002 South wall

Project No.
Book No.

From Page No.

South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4137	4281	8814	8231	9696	7095	7854	9386	8838	9274	8829
5021	7169	9988	11054	6312	8149	8513	9382	8991	9061	9904
					8090	8625	9401	9220	8629	8247
									8319	9249

5.5	6.0
8953	9273
9585	9459
8327	8717

Witnessed & Understood by me, | Date | Invented by

Project No.
Book No.
TITLE S414 TP002 East Wall

From Page No.

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3490	6321	6284	8714	8692	8562	7767	8055	7057	8307	9110
4004	7018	8313	11632	10653	7767	8562	8516	7627	7896	8595
						8478	9645	8880	8410	8926

5.5	6.0
9023	9283
8088	8605
8067	9146

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Witnessed & Understood by me, | Date | Invented by | Date

TITLE Su 16 TP002 5-18-09 3:30pm Project No. Book No.

From Page No.

Su 16 TP002 5-18-09 3:30 pm

1-min static count - 11,930

Northwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3081	5919	6052	6900	7599	7638	7247	7247	7949	7531	7847
3500	5700	5700	6400	7000	7300	6900	7000	7400	7400	7800
3013	5627	4014	6200	6400	7068	6243	6947	7256	7069	7725

5.5	6.0
9157	9245
8700	8700
8256	8263

Top - Highest
middle - Avg
Bottom - lowest
> CPM readings

To Page No.

Witnessed & Understood by me, Date Invented by Date

40 Project No. Book No. TITLE 5416 TP002 South wall

From Page No.

Southwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
6103	6558	6899	7987	8312	7013	7473	8364	8580	8254	9107
5000	6100	6800	7500	7500	6900	7200	7200	8000	7900	8500
4561	5999	6742	6841	6661	6719	7096	6957	7726	6887	8230

5.5	6.0
9271	8798
8500	8800
8152	8380

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No.

Witnessed & Understood by me, Date Invented by Date

TITLE Sulb TP002 East wall

Project No. _____
Book No. _____

41

From Page No. _____

East wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
6081	7272	7789	7441	7481	7246	7783	7444	7411	7239	7836
8000	7000	7400	7208	7200	7000	7300	7000	7000	6900	7400
4596	6833	7233	7102	7054	6750	6833	6691	6300	6708	7251

5.5	6.0
8227	8386
7700	7900
7087	7615

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

Project No. _____
Book No. _____

TITLE S416 TP 002 West Wall

From Page No. _

West wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4440	6556	7787	7000	8619	6718	7168	7137	7383	7784	8232
4000	6400	7200	6800	8000	6700	6000	7000	7300	7300	7800
3418	6325	6912	6787	7770	6038	5862	6782	7275	6025	7400

5.5	6.0
8748	8868
8100	8500
7938	8374

top - Highest
middle - Avg
bottom - lowest
> cpm readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE Su16 TP001 5-18-09 5:00pm Project No. _____ Book No. _____

From Page No. __

Su16 TP001 5-18-09 5:00pm

1-min static count 4381

South wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5714	8390	8255	8061	8201	7443	7771				8922
5500	7000	7500	7400	7400	7300	7500				8500
5460	5685	7281	6642	7270	7149	6906				8326

5.5	6.0
8309	8730
8000	8500
7654	8352

Concrete southwall 3.5-4.5

Top - Highest
middle - Avg
Bottom - lowest
} cpm readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No

2416 TP001 Northwall

From Page No.

Northwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
6900	7218	7877	7328	8044	7313	9080	8952	9647	9353	9059
6500	6500	7000	7000	7400	6900	7500	8600	9000	9000	9300
6244	5919	6057	6621	6999	6438	7082	8307	8601	8162	8798

5.5	6.0
10724	10939
10500	10500
10487	9826

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

TITLE 5416 TP001

Project No.
Book No.

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From Page No.

East wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5870	7246	8181	8993	7563	7590	8672	9641	9074	9172	9452
8000	7000	7700	8000	7200	7200	8000	8200	8500	9000	9000
4251	6140	7594	7487	7182	7018	7060	7859	8005	8589	8592

5.5	6.0
9541	9936
9000	9500
8742	9277

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No. _____
Book No. _____

TITLE SU16 TP001 West wall

From Page No. __

West wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4893	5295	7033	8023	7791	6995	8235	8059	8077	8732	10545
4500	5000	6500	7700	7700	6500	7100	7700	7800	8500	10000
4306	4509	6146	7370	7400	6483	6810	7554	7647	8220	9206

5.5	6.0
10084	10077
9900	9900
8721	9769

Top - Highest
Middle - Avg
Bottom - lowest
} CPM readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

| | |

TITLE Su 19 TP001 5-19-09 10:30Am Project No. ____ Book No. ____

From Page No. __

Su19 TP001 5-19-09 10:30Am

1-min static count - 5916 cpm

North wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4212	5664	6787	7440	7409	7370	7402	7692	8015	7791	8188
4000	5300	6600	7000	7300	7600	7000	7500	7500	7500	>7500
3803	5064	6400	6846	7224	6848	6729	7423	7062	6949	7092

5.5	6.0
8601	9605
8500	9200
8424	9027

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No. ____

Witnessed & Understood by me, Date Invented by Date

Project No. _____
Book No. _____ TITLE Su 19 TP001

From Page No. __

Su 19 TP001 South wall

.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4629	7328	7846	6261	6949	7826	8039	6739	7503	8330	8388
4100	7000	7000	6000	6500	7600	7800	6500	7000	8000	8000
3385	6477	6791	5460	6288	7451	7193	6170	6625	7656	8461

5.5	6.0
8758	10120
8700	9100
8670	7004

Top - Highest
middle - Avg
bottom - lowest
> cpm readings

Witnessed & Understood b ate

To Page No. _____

TITLE SU19 TP001

Project No.
Book No.

From Page No.

East wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4649	6733	6932	8166	8068	7825	8130	6965	7466	7743	7218
4300	6200	6800	8000	7900	7500	8000	6500	7000	7300	7500
4126	5947	6772	7856	7640	7333	7496	6232	6155	6903	7285

5.5	6.0
13633	9474
8500	9000
7837	8688

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

Witnessed & Understood by me,

Date

SU19 TP001

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4645	5497	5879	6294	8703	7824	6705	6749	7132	8226	7643
4400	5300	5800	6000	8000	7000	6600	6600	6600	8000	7300
4236	5280	5712	5958	7290	6467	6405	6071	6325	7443	7189

5.5	6.0
8535	9780
8000	9000
7953	8641

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

Witnessed & Understood b

TITLE SU 19 TP004 5-19-09 11:00am

Project No.

Book No.

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SU 19 TP004 was relocated to SU 15

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No.

TITLE S420 TP001 5-19-09 3:30pm

From Page No.

S420 TP001 5-19-09 3:30pm

1-min static count - 11533

Northwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3540	5060	4193	5741	5206	5920	7240	6905	7906	8076	8686
3300	4000	4000	5100	5000	5800	6000	6300	7400	7000	8000
3060	3650	3994	4769	5041	5720	5744	6105	7297	6065	8744

5.5	6.0
9095	10284
8700	8000
7420	8647

Top - highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

5420 TP001

Southwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4903	6573	6781	7106	7196	7963	6824				7482
4600	6200	6200	6500	6600	6600	6800				7300
4470	6007	5866	5980	6045	5993	6602				7175

5.5	6.0
8109	8806
8050	8700
8014	8666

3.5 - 4.5 concrete

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

Witnessed & Understoo

Project No.
Book No.

TITLE 5420 TP001 East Wall

From Page No.

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3913	4137	4304	4779	5268	5115	5775	7133	6784	8502	9258
3500	4000	4200	4600	5000	4900	5500	7000	6600	8000	9000
3293	3488	4144	4573	4536	4666	5231	6417	6551	7741	8616

5.5	6.0
9665	9641
9000	8000
8311	8647

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

SU 20 TP001

Project No.
Book No.

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4060	4310	4304	4779	5268	5115	5775	7833	6794	8502	9259
4000	4000	4200	4600	5000	4900	5500	7000	6600	8000	9000
3733	3606	4144	4573	4536	4666	5231	6417	6551	7741	8616

5.5	6.0
9665	9641
9000	9000
8311	8647

Top - Highest
middle - Avg
Bottom - lowest
> CPM Readings

Witnessed & Understood by me | Invented by | Date | To Page No.

Project No.
Book No.

TITLE S418 TP001 5-19-09 6:10pm

From Page No.

S418 TP001 5-19-09 6:10 pm

Northwall

1-min static count = 4407

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4988	6309	6589	6637	7554	7614	7683	7385	6818	9811	11117
4900	6000	6000	6300	7200	7200	7200	7000	6600	8600	8000
4820	5981	5732	6097	7070	6632	6975	6748	6031	8473	8783

5.5	6.0
10843	10433
10600	10000
10443	9945

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No.

Witnessed & Understood by me; Date Invented by Date

TITLE 5418 TP001 Southwall

Project No.
Book No.

57

From Page No.

Southwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4820	6001	7689	8311	9194	9085	9416	9477	9986	9961	11784
4500	5900	7400	8000	8600	8600	8900	9100	9600	9600	9800
4111	5405	7272	7518	8297	8278	8746	8995	9138	9874	9131

5.5	6.0
8003	10325
8700	9800
8189	9517

Top - Highest
middle - Avg
Bottom - lowest

> cpm readings

Witnessed & Understo

Invented by

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Project No. _____
Book No. _____

TITLE SU18 TP001 East Wall

From Page No. _____

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5216	5460	6241	8014	7735	7832	7189	7385	8148	9022	8716
5000	5300	6000	7900	6900	7500	7000	7000	7800	8700	8400
4545	5273	5920	7581	6855	7393	6761	69.3	7245	8589	7596

5.5	6.0
9725	10387
9500	10100
9383	10091

Top - Highest
middle - Avg
Bottom - lowest

> CPM readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE 5418 TP001 West wall

Project No. _____
Book No. _____

From Page No. _

West wall

.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4862	5629	7334	7194	7434	7186	8848	8096	7683	8711	8614
4500	5200	6000	7000	7000	7000	7900	8000	7600	8500	8000
4227	4865	5876	6661	6440	6981	7592	7813	7572	8332	7786

5.5	6.0
8117	10619
8900	9900
8761	8270

Top - Highest
middle - Avg
bottom - lowest
> CAN readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

Project No.
Book No.
TITLE SU 15 TP003 5-20-09 6:00pm

From Page No.

SU 15 TP003 5-20-09 6:00pm

1-min static 4581

Northwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3895	5172	6192	6382	7563	8165	8331	7809	7620	8319	7375
3622	5951	6375	6903	7859	7504	8146	7738	8469	8300	9403
3812	5764	6360	7478	7904	7103	7863	8656	8178	9187	9835

5.5	6.0
7964	9272
8135	10592
8960	8682

Witnessed & Understood by me. Date Invented by Date To Page No.

TITLE 5415 TP003 Southwall

Project No.
Book No.

From Page No.

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Southwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4592	7275	8380	7736	8246	8092	8887	8546	8422	7824	8883
4141	8966	8187	8236	8804	8271	8863	7393	8559	8298	8611
4251	8697	7877	8877	8276	8211	8019	8494	9424	8629	8824
4828	8468	8123	8780	8650	7849	8722	8500	9592		

5.5	6.0
9264	10306
9411	10323
9887	10679

Witnessed & Understood by me. Date Invented by Date

To Page No.

Project No. _____
Book No. _____

TITLE S415 TP003 West wall

From Page No. _

Westwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
3995	6333	6938	7465	7798	8150	7587	7167	8535	7550	8449
4289	7035	7033	7645	7922	7794	7980	7731	9028	6778	8279
4118	7798	6861	7914	8161	7852	8134	8055	8766	6903	7780
4901	9196	7035	7311	7706	7853	8471	8047	8353		

5.5	6.0
8326	9303
8843	9305
9926	9800

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date

TITLE Sy 15 TP003 East wall

Project No.
Book No.

From Page No.

East wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
6661	7221	9347	9235	9459	8895	7822	8227	7801	7608	7559
5958	8846	9142	8190	8572	9059	9143	8523	7984	7622	7488
6027	9369	8593	7027	8533	8591	7613	8233	8732	7868	8178

5.5	6.0
8007	9090
8567	8295
8399	9248

Witnessed & Understood by me, | Date | Invented by | Date

To Page No.

Project No.
Book No.

TITLE

From Page No.

No Further Entries in this Logbook

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

NOTEBOOK NO. 2

ISSUED TO: Damon Deville

DATE: 5-20-09

DEPARTMENT:

RETURNED:

Painesville FUSRAP Site

Painesville FUSRAP Site Pre-Remediation Volume
Uncertainty Reduction Subsurface Soil Sampling

Contract No: W912P4-07-D-0009
Delivery Order: 0002

Log Book Start Date: 5-20-09

Log Book End Date: 5-20-09

Scientific Notebook Company – www.snco.com

TITLE SU 18 TP002 5-20-09 12:00pm

Project No.
Book No.

From Page No.

SU 18 TP002 5-20-09 12:00p.m

Northwall

1-min static count - 4200

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4018	6955	6906	9354	9868	9715	9902	7917	9284	8659	8676
3700	6000	6300	8000	8500	9100	9100	7500	8000	8400	8300
3276	4757	6144	7685	8224	8840	8339	7034	8733	8316	9171

5.5	6.0
10726	9839
9000	9500
8577	9253

Top - Highest
middle - Avg
Bottom - lowest
> CPm readings

Witnessed & Understood by me, | Date | Invented by | Date | To Page No.
Recorded by

Project No. _____
Book No. _____

TITLE S418 TP002 Southwall

From Page No. _

Southwall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4211	7513	5354	5356	6300	5447	4342	5680	6567	8826	10766
3700	6000	5000	5000	5650	5000	4000	5200	6100	8000	9000
3233	4714	3857	4759	5086	4271	2949	4194	5999	7535	8684

5.5	6.0
9064	10061
8700	9000
8248	8247

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

To Page No. _____

Witnessed & Understood by me, | Date | Invented by | Date
Recorded by

TITLE SL 18 TP002 East Wall

Project No.
Book No.

From Page No.

East Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
4016	6672	6375	8126	9050	8010	6911	8610	9640	9203	9753
3700	5000	5000	6000	7000	7500	6000	7900	8000	8900	9300
3267	4677	4838	5355	5718	6864	4001	7364	7792	8531	9144

5.5	6.0
10954	10382
9500	9800
8449	9127

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

Witnessed & Understood by me,

Date

Invented by

Recorded by

Date

To Page No.

Project No. _____
Book No. _____

TITLE S418 TP002 West Wall

From Page No. _____

West Wall

0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
6076	6354	6291	7296	8256	7393	6211	8553	9378	8647	10324
5000	5000	5800	6200	6600	6600	5700	6900	8700	8400	10000
4152	4522	5411	5478	5975	5994	5271	6177	8199	8235	9705

5.5	6.0
9601	10502
9100	10100
8172	9801

Top - Highest
middle - Avg
Bottom - lowest
> cpm readings

Witnessed & Understood by me, | Date | Invented by | Recorded by

Appendix G. Test Pit Geological Data

TEST PIT SOIL BORING DESCRIPTION AND NOTES

Test Pit Name	Notes
Test Pit SU14TP001 (geologic description from north face) 0.0-0.5ft Root mat 0.5-1.7ft Fill: gravel 1.7-1.9ft Fill: compacted clay 1.9-4.1ft Root mat. Buried degraded root bed 4.1-6.0ft Clay: with gravel, damp, firm, low plasticity, 2.5Y3/3 dk olive brown 6.0ft Total Depth	None
Test Pit SU14TP002 (geologic description from east wall) 0.0-0.5ft Fill: coarse gravel surface cover 0.5-2.3ft Fill: brick (red and cream color) 2.3-4.7ft Clay: silty, hard, damp, medium plasticity, 10YR5/4 yellowish brown 4.7-5.5ft Clay: moist, firm, high plasticity, GLEY1-2.5 10Y greenish black 5.5ft Total Depth	None
Test Pit SU14TP003 (geologic description from north face of pit) 0.0-0.9ft Root mat 0.9-1.9ft Fill: compacted clay and coarse gravel 1.9-2.2ft Fill: discontinuous black granular fill 2.2-5.7ft Fill: compacted clay with visible brick fragments 5.7-6.2ft Asphalt: layer of asphalt present 6.2ft Total Depth	None

Test Pit SU15TP001 (geologic description at west wall of pit) 0.0-0.4ft Root mat 0.4-2.8ft Fill: gravel fill, finer gravel to 1.7ft, then coarse gravel 1.7-2.8ft 2.8-4.0ft Clay: slightly damp, very hard, low plasticity, 2.5Y4/4 olive brown 4.0ft Total Depth due to refusal	Note: (1) Test Pit met refusal at 4.0 ft on concrete slab. (2) South wall is concrete
Test Pit SU15TP002 (geologic description from east face of pit) 0.0-0.4ft Root mat with dirt and pebbles 0.4-1.3ft Fill: mixed large gravel (60mm) and fill dirt 1.3-2.6ft Sand: clayey, damp, loose granular, 10YR4/3 brown 2.6-3.2ft Clay: moist, firm, high plasticity, 2.5YR5/3 light olive brown. One 70mm rounded granite cobble in this interval. 3.2-6.0ft Clay: silty, slightly moist, firm, high plasticity, 7.5YR3/1 very dark gray 6.0 ft Total Depth	Note: From 0.0-1.9 ft on north wall, pit encountered 2 railroad ties with gravel/dirt base.
Test Pit SU15TP003 (geologic description from east wall) 0.0-0.8ft Root mat 0.8-1.6ft Fill: coarse gravel 1.6-2.7ft Fill: dark stained fine sand with strong petroleum smell encountered (only appears on east wall) 2.7-6.0ft Clay: damp, hard, highly plastic, 10YR5/8 yellowish brown mottled with GLEY2-4/1 dark bluish gray 6.0ft Total Depth	Note: (1)This test pit was substituted for SU19TP004 ("Stairway to Hell") as SU19TP004 met refusal at 1.5ft on concrete pad surrounded on 4 sides by concrete footer (2) Petroleum smell at 1.6-2.7 ft.
Test Pit SU16TP001 (geologic description from east wall) 0.0-0.4ft Root mat 0.4-4.4ft Fill: clay and gravel 4.4-6.0ft Clay: damp, hard, medium plasticity, 10YR5/4 yellowish brown 6.0ft Total Depth	Note: Old clay pipe (storm drain?) at 3.6-4.4ft.

Test Pit SU16TP002 (geologic description from north wall) 0.0-0.5ft Fill: coarse gravel surface cover 0.5-2.3ft Fill: red brick rubble and soil 2.3-6.0ft Fill: clay, compacted 6.0ft Total Depth	Note: (1) Test pit was moved 100 ft due west. (2) Three 1-1/2in rebar was present at 6 ft depth. (3) Water seepage occurred at 3ft depth in northeast corner of pit. Southwest corner of pit was wet from approximately 3.5 ft into hole
Test Pit SU18TP001 (geologic description from east wall) Root mat 0.8-2.7ft Fill: coarse gravel and soil 2.7-6.0ft Clay: damp, firm, high plasticity, 10YR4/6 dark yellowish brown 6.0ft Total Depth	Note: Red clay pipe encountered at approximately 3.0 ft on east wall. No seepage noted.
Test Pit SU18TP002 No description available	
Test Pit SU19TP001 (geologic description from west wall) 0.0-0.7ft Root mat and loose soil 0.7-2.0ft Fill: coarse gravel 2.0-2.8ft Fill: fine sand and small gravel 2.8-3.3ft Fill: black layer of fill consisting of medium gravel and black clay 3.3-6.0ft Clay: damp, hard, high plasticity 10YR5/8 yellowish brown mottled with GLEY2-4/1 dark bluish gray 6.0ft Total Depth	Note: Metal underground pipe running northeast-southwest at approximately 2.8 ft. was severe. Water entering pit was pumped out into onsite poly tanks. Approximately 275 gallons of water was removed.
Test Pit SU19TP002 (geologic description from north face of pit) 0.0-0.7ft Root mat with loose dry, coarse gravel 0.7-1.8ft Fill: angular cobbles to coarse gravel, dry 1.8-3.9ft Fill: loose granular fill with occasional broken brick and rounded cobbles. Color is 2.5YR3/3 dark reddish brown 3.9-5.0ft Clay: moist, hard, high plasticity, 10YR4/6 dark yellowish brown 5.0-5.5ft Sloughing of sides filled bottom 0.5 ft interval 5.0 ft Total Depth	Note: During excavation, operator encountered a building footer on the east wall of the pit between 0.0-3.9ft. Footer extended horizontally 3.8ft into pit. Three 4-in clay pipes were encountered at approximately 3 ft bgs extending northeast-southwest across pit.

Test Pit SU19TP004 0.0-1.5ft Rubble. Met refusal at 1.5 ft.	Note: (1) This pit met refusal at 1.5ft on concrete pad and was surrounded on 4 sides by concrete footer. (2) Test Pit SU15TP003 was substituted for this test

Test Pit SU19TP003 (geologic description from west wall of pit) 0.0-1.4 ft Root mat and coarse gravel 1.4-3.9ft Fill: compacted clay fill with granular fill at 3.3 ft. 3.9-6.0ft Clay: slightly moist, hard, low plasticity, 10YR5/6 yellowish brown mottled with GLEY2-5/1 bluish gray 6.0ft Total Depth	Note: North wall encountered concrete pad at surface and southwest corner has concrete to 4.5 ft bgs.
Test Pit SU20TP001 (geologic description from east wall) 0.0-2.0ft Fill: coarse gravel from RR bed 2.0-5.4ft Clay: moist, firm, low plasticity 10YR5/8 yellowish brown mottled with GLEY2-4/1 dark bluish gray 5.4-6.0ft Clay: silty, moist, hard, medium plasticity, 2.5Y5/4 light olive brown 6.0ft Total Depth	Note: This test pit crosses an old RR siding that ran east-west. South wall has concrete pad between 2.0-3.0ft interval. Several rail road ties were removed.
Test Pit SU20TP002 (geologic description from north-west face of pit) 0.0-0.6ft Root mat with well sorted gravels to silts 0.6-1.0ft Fill: loose granular fill 5YR2.5/1 black 1.0-1.6ft Clay: silty, damp, hard, medium plasticity, GLEY2-3/1 very dark greenish gray with discontinuous streaks of black 1.6-2.3ft Clay: silty, damp, firm, low plasticity, GLEY2-3/1 very dark greenish gray with streaks of yellowish orange 2.3-6.0ft Silt: with 5% fine sand, damp, firm, low plasticity, 7.5YR4/6 strong brown 6.0ft Total Depth	Note: (1) Black granular fill per historic documents was typically "hot" in the past. This layer was not hot. (2) This horizon has discontinuous lenses of 5YR4/4 reddish clay. Lenses appear to be approximately 0.5ft x 1.0 ft.

Appendix H. Radiological Control Information

On-Site Air Monitoring Results

Laboratory Air Monitoring Results

Radiological Survey Forms

On-Site Air Monitoring Results

Field Air Sample Count Log
Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling, W912P4-07-D-00009, D.O.0002

Sample I.D.	Date	Flow Rate (lpm)	Air Sample α cpm	Air Sample β cpm	Alpha Activity (µCi/ml)	Beta Activity (µCi/ml)	Count Date
	Start Time	Total Volume	α BKGD cpm	β BKGD cpm			Count Time
	Stop Time	(ml)	Net α cpm	Net β cpm	Alpha MDA (µCi/ml)	Beta MDA (µCi/ml)	Tech. Initials
PSV-AS-SU20-TP002-51509	5-15-09	60 lpm	0.8	219.5	4.14 E-14	4.69 E-13	5-16-09
	09:00	1.92 E7 ml	0.2	211.6	3.50 E-14	4.19 E-13	13:10
	14:20		0.6	7.9			MWK
PNV-AS-SU19-TP002-51509	5-15-09	60 lpm	0.4	221.2	<*MDA*	1.01 E-12	5-16-09
	14:40	1.08 E7 ml	0.2	211.6	6.22 E-14	7.45 E-13	13:23
	17:40		0.2	9.6			MWK
PNV-AS-51509 Site Boundary Downwind	5-15-09	45 lpm	2.3	234.2	1.26 E-13	1.17 E-12	5-16-09
	09:40	2.21 E7 ml	0.2	211.6	3.04 E-14	3.64 E-13	13:36
	17:50		2.1	22.6			MWK
PNV-AS-51509 Site Boundary Upwind	5-15-09	60 lpm	1.3	226.4	4.80 E-14	5.57 E-13	5-16-09
	09:20	3.03 E7 ml	0.2	211.6	2.22 E-14	2.66 E-13	13:46
	17:45		1.1	14.8			MWK
PNV-AS-SU15-TP002-51609	5-16-09	60 lpm	2.2	224.1	7.45 E-13	3.96 E-12	5-16-09
	08:35	3.60 E6 ml	0.2	211.6	1.87 E-13	2.23 E-12	13:57
	09:35		2.0	12.5			MWK
PNV-AS-SU14-TP003-51609	5-16-09	60 lpm	1.4	224.3	7.56 E-13	6.89 E-12	5-16-09
	09:45	2.10 E6 ml	0.2	211.6	3.20 E-13	2.83 E-12	14:14
	10:20		1.2	12.7			MWK

Note: 10 minute background and air sample counts performed.
Counting Instrument Used: Ludlum Model 3030 **Serial Number:** 247862 **Date of Calibration:** 4-22-2009

Alpha Efficiency: 34.04% **Beta Efficiency:** 39.54%

$$Alpha\ \mu Ci/ml = \frac{Net\ alpha\ cpm\ x\ 4.505\ E-7}{0.3404\ x\ Volume\ (ml))}$$

$$Beta\ \mu Ci/ml = \frac{Net\ beta\ cpm\ x\ 4.505\ E-7}{0.3954\ x\ Volume\ (ml))}$$

$$MDA\ \mu Ci/ml = \frac{3+4.65\sqrt{BKGD_{cpm}}}{(eff)(volume\ ml)(Count\ Time_{sample})}\ x4.505E-7$$

Field Air Sample Count Log
Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling, W912P4-07-D-00009, D.O.0002

Sample I.D.	Date	Flow Rate (lpm)	Air Sample α cpm	Air Sample β cpm	Alpha Activity (µCi/ml)	Beta Activity (µCi/ml)	Count Date
	Start Time	Total Volume	α BKGD cpm	β BKGD cpm			Count Time
	Stop Time	(ml)	Net α cpm	Net β cpm	Alpha MDA (µCi/ml)	Beta MDA (µCi/ml)	Tech. Initials
PNV-AS-51609 Site Boundary Upwind	5-16-09	60 lpm	2.7	236.6	3.24 E-13	2.79 E-12	5-16-09
	8:40	1.02 E7 ml	0.2	211.6	6.59 E-14	7.89 E-13	15:22
	11:30		2.5	25.0			MWK
PNV-AS-51609 Site Boundary Downwind	5-16-09	60 lpm	2.8	226.0	3.37 E-13	1.61 E-12	5-16-09
	8:45	1.02 E7 ml	0.2	211.6	6.59 E-14	7.89 E-13	15:34
	11:35		2.6	14.4			MWK
PNV-AS-SU21-TP001-51609	5-16-09	60 lpm	1.1	202.2	*3.39 E-14*	3.18 E-12	5-16-09
	10:25	3.90 E6 ml	0.4	191.3	2.02 E-13	1.97 E-12	15:47
	11:30		0.7	10.9			MWK
PNV-AS-51609 Site Boundary Upwind	5-16-09	60 lpm	15.4	227.6	1.99 E-12	4.18 E-12	5-16-09
	13:55	9.90 E6 ml	0.4	191.3	7.94 E-14	7.75 E-13	17:46
	16:10		15.0	36.3			MWK
PNV-AS-51609 Site Boundary Downwind	5-16-09	60 lpm	13.6	215.4	1.94 E-12	3.05 E-12	5-16-09
	13:45	9.00 E6 ml	0.4	191.3	8.74 E-14	8.52 E-13	17:58
	16:150		13.2	24.1			MWK
PNV-AS-SU14-TP003-516509 Damon Deville	5-16-09		0.4	152.6	*<MDA*	*<MDA*	5-17-09
	12:15	5,000ml	0.1	160.5	1.18 E-10	1.41 E-9	08:31
	13:11		0.3	-7.9			MWK

Note: 10 minute background and air sample counts performed.
Counting Instrument Used: Ludlum Model 3030 **Serial Number:** 247862 **Date of Calibration:** 4-22-2009

Alpha Efficiency: 34.04% **Beta Efficiency:** 39.54%

$$Alpha\ \mu Ci/ml = \frac{Net\ alpha\ cpm\ x\ 4.505\ E-7}{0.3404\ x\ Volume\ (ml))}$$

$$Beta\ \mu Ci/ml = \frac{Net\ beta\ cpm\ x\ 4.505\ E-7}{0.3954\ x\ Volume\ (ml))}$$

$$MDA\ \mu Ci/ml = \frac{3+4.65\sqrt{BKGD_{cpm}}}{(eff)(volume\ ml)(Count\ Time_{sample})} x4.505E-7$$

Field Air Sample Count Log
Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling, W912P4-07-D-00009, D.O.0002

Sample I.D.	Date	Flow Rate (lpm)	Air Sample α cpm	Air Sample β cpm	Alpha Activity (µCi/ml)	Beta Activity (µCi/ml)	Count Date
	Start Time	Total Volume	α BKGD cpm	β BKGD cpm			Count Time
	Stop Time	(ml)	Net α cpm	Net β cpm	Alpha MDA (µCi/ml)	Beta MDA (µCi/ml)	Tech. Initials
PNV-AS-SU21-TP001-51609	5-16-09		0.3	157.3	*<MDA*	*<MDA*	5-17-09
Damon Deville	13:17	2,400 ml	0.1	160.5	2.47 E-10	2.94 E-9	09:05
	13:48		0.2	-3.2			MWK
PNV-AS-SU15-TP002-51609	5-16-09		0.2	137.7	*<MDA*	*<MDA*	5-17-09
Damon Deville	14:05	3,500 ml	0.1	160.5	1.69 E-10	2.02 E-9	11:01
	14:40		0.1	-22.8			MWK
PNV-AS-SU14-TP003-51609	5-16-09		0.4	157.0	*<MDA*	*<MDA*	5-17-09
Damon Deville	15:24	2,800 ml	0.1	160.5	2.11 E-10	2.52 E-9	08:52
	15:56		0.3	-3.5			MWK
PNV-AS-SU21-TP001-51609	5-16-09		0.2	138.4	*<MDA*	*<MDA*	5-17-09
Damon Deville	16:30	1,700 ml	0.1	160.5	3.48 E-10	4.15 E-9	11:17
	16:59		0.1	-22.1			MWK
PNV-AS-SU15-TP002-51609	5-16-09		0.2	150.3	*<MDA*	*<MDA*	5-17-09
	08:35	3.6 E6 ml	0.1	160.5	1.64 E-13	1.96 E-12	11:32
	11:05		0.1	-10.2			MWK
PNV-AS-SU14-TP001-51709	5-17-09	60 lpm	0.4	195.6	*<MDA*	1.01 E-12	5-18-09
SU15-TP001-51709	07:55	8.7 E6	0.3	187.9	8.43 E-14	8.74 E-13	09;50
	10:20		0.1	7.7			MWK

Note: 10 minute background and air sample counts performed.
Counting Instrument Used: Ludlum Model 3030 **Serial Number:** 247862 **Date of Calibration:** 4-22-2009

Alpha Efficiency: 34.04% **Beta Efficiency:** 39.54%

$$Alpha\ \mu Ci/ml = \frac{Net\ alpha\ cpm\ x\ 4.505\ E-7}{0.3404\ x\ Volume\ (ml))}$$

$$Beta\ \mu Ci/ml = \frac{Net\ beta\ cpm\ x\ 4.505\ E-7}{0.3954\ x\ Volume\ (ml))}$$

$$MDA\ \mu Ci/ml = \frac{3+4.65\sqrt{BKGD_{cpm}}}{(eff)(volume\ ml)(Count\ Time_{sample})}\ x4.505E-7$$

Field Air Sample Count Log
Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling, W912P4-07-D-00009, D.O.0002

Sample I.D.	Date	Flow Rate (lpm)	Air Sample α cpm	Air Sample β cpm	Alpha Activity (µCi/ml)	Beta Activity (µCi/ml)	Count Date
	Start Time	Total Volume	α BKGD cpm	β BKGD cpm			Count Time
	Stop Time	(ml)	Net α cpm	Net β cpm	Alpha MDA (µCi/ml)	Beta MDA (µCi/ml)	Tech. Initials
PNV-AS-51709 Site Boundary Upwind	5-17-09	60 lpm	1.6	195.2	5.97 E-14	2.89 E-13	5-18-09
	07:50	2.88 E7	0.3	187.9	2.55 E-14	2.64 E-13	10:05
	15:50		1.3	7.3			MWK
PNV-AS-51709 Site Boundary Downwind	5-17-09	60 lpm	1.2	176.7	4.05 E-14	*<MDA*	5-18-09
	07:45	2.94 E7	0.3	187.9	2.50 E-14	2.59 E-13	10:20
	15:55		0.9	-11.2			MWK
PNV-AS-SU14-TP002,SU16-TP002, SU16-TP001, Damon Deville	5-17-09		0.4	181.3	*<MDA*	*<MDA*	5-18-09
	10:20	6,900 ml	0.3	187.9	5.75 E-11	1.10 E-9	10:30
	12:15		0.1	-6.6			MWK
PNV-AS-51809 Site Boundary Upwind	5-18-09	60 lpm	1.1	346.9	3.84 E-14	1.41 E-12	5-19-09
	08:35	3.45 E7	0.1	304.2	1.71 E-14	2.78 E-13	06:45
	18:10		1.0	42.7			MWK
PNV-AS-51809 Site Boundary Downwind	5-18-09	60 lpm	0.6	335.0	1.97 E-14	1.04 E-12	5-19-09
	08:40	3.36 E7	0.1	304.2	1.76 E-14	2.58 E-13	07:02
	18:00		0.5	30.8			MWK
PNV-AS-SU14-TP002-51902	5-18-09	60 lpm	0.5	326.6	*<MDA*	1.77 E-12	5-19-09
	08:30	1.44 E7	0.1	304.2	4.10 E-14	6.65 E-13	07:14
	12:30		0.4	22.4			MWK

Note: 10 minute background and air sample counts performed.
Counting Instrument Used: Ludlum Model 3030 **Serial Number:** 247862 **Date of Calibration:** 4-22-2009

Alpha Efficiency: 34.04% **Beta Efficiency:** 39.54%

$$Alpha\ \mu Ci/ml = \frac{Net\ alpha\ cpm\ x\ 4.505\ E-7}{0.3404\ x\ Volume\ (ml))}$$

$$Beta\ \mu Ci/ml = \frac{Net\ beta\ cpm\ x\ 4.505\ E-7}{0.3954\ x\ Volume\ (ml))}$$

$$MDA\ \mu Ci/ml = \frac{3+4.65\sqrt{BKGD_{cpm}}}{(eff)(volume\ ml)(Count\ Time_{sample})} x4.505E-7$$

Field Air Sample Count Log
Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling, W912P4-07-D-00009, D.O.0002

Sample I.D.	Date / Start Time / Stop Time	Flow Rate (lpm) / Total Volume (ml)	Air Sample α cpm / α BKGD cpm / Net α cpm	Air Sample β cpm / β BKGD cpm / Net β cpm	Alpha Activity (µCi/ml) / Alpha MDA (µCi/ml)	Beta Activity (µCi/ml) / Beta MDA (µCi/ml)	Count Date / Count Time / Tech. Initials
PNV-AS-SU16-TP002-51809	5-18-09	60 lpm	0.3	336.2	<*MDA*	8.10 E-12	5-19-09
	14:30	4.50 E6	0.1	304.2	1.31 E-13	2.28 E-12	07:50
	15:45		0.2	32.0			MWK
PNV-AS-SU16-TP001-51809	5-18-09	60 lpm	0.5	332.6	<*MDA*	7.70 E-12	5-19-09
	16:10	4.20 E6	0.1	304.2	1.41 E-13	2.28 E-12	08:10
	18:20		0.4	28.4			MWK
PNV-AS-51909-Upwind	5-19-09	60 lpm	1.3	288.0	3.75 E-14	2.48 E-13	5-21-09
	07:45	4.23 E7	0.1	278.8	1.40 E-14	2.17 E-13	07:59
	19:30		1.2	9.2			MWK
PNV-AS-51909-Downwind	5-19-09	60 lpm	1.5	281.9	4.39 E-14	<*MDA*	5-21-09
	07:37	4.22 E7	0.1	278.8	1.40 E-14	2.18 E-13	08:08
	19:20		1.4	3.1			MWK
PNV-AS-SU20-TP001-51909	5-19-09	60 lpm	0.9	294.6	2.97 E-14	5.04 E-13	5-21-09
	09:30	3.57 E7	0.1	278.8	1.66 E-14	2.57 E-13	08:18
	19:25		0.8	15.8			MWK
PNV-AS-SU19-TP001-51909	5-19-09	60 lpm	0.3	297.3	<*MDA*	3.51 E-12	5-21-09
	07:40	6.00 E6	0.1	278.8	9.86 E-14	1.53 E-12	08:35
	09:00		0.2	18.5			MWK

Note: 10 minute background and air sample counts performed.
Counting Instrument Used: Ludlum Model 3030 **Serial Number:** 247862 **Date of Calibration:** 4-22-2009

Alpha Efficiency: 34.04% **Beta Efficiency:** 39.54%

$$Alpha\ \mu Ci/ml = \frac{Net\ alpha\ cpm\ x\ 4.505\ E-7}{0.3404\ x\ Volume\ (ml))}$$

$$Beta\ \mu Ci/ml = \frac{Net\ beta\ cpm\ x\ 4.505\ E-7}{0.3954\ x\ Volume\ (ml))}$$

$$MDA\ \mu Ci/ml = \frac{3+4.65\sqrt{BKGD_{cpm}}}{(eff)(volume\ ml)(Count\ Time_{sample})} x4.505E-7$$

Field Air Sample Count Log

Painesville FUSRAP Site Pre-Remediation Volume Uncertainty Reduction Subsurface Sampling, W912P4-07-D-00009, D.O. 0002

Sample I.D.	Date	Flow Rate (lpm)	Air Sample α cpm	Air Sample β cpm	Alpha Activity (µCi/ml)	Beta Activity (µCi/ml)	Count Date
	Start Time	Total Volume	α BKGD cpm	β BKGD cpm			Count Time
	Stop Time	(ml)	Net α cpm	Net β cpm	Alpha MDA (µCi/ml)	Beta MDA (µCi/ml)	Tech. Initials
PNV-AS-Damon Deville	5-19-09		0.2	284.3	*<MDA*	*<MDA*	5-21-09
SU19 TP001, SU20 TP001	08:30	2,100ml	0.1	278.8	2.82 E-10	4.38 E-9	08:48
	17:30		0.1	5.5			MWK
PNV-AS-52009-Upwind	5-20-09	60 lpm	4.3	288.0	1.31 E-13	2.48 E-13	5-21-09
	07:30	4.23 E7	0.1	278.8	1.40 E-14	2.17 E-13	09:04
	19:15		4.2	9.2			MWK
PNV-AS-52009-Downwind	5-20-09	60 lpm	4.8	298.4	1.44 E-13	5.17 E-13	5-21-09
	07:10	4.32 E7	0.1	278.8	1.37 E-14	2.12 E-13	09:17
	19:10		4.7	19.6			MWK
PNV-AS-SU18-TP001-52009	5-20-09	60 lpm	1.4	280.5	8.69 E-14	*9.78 E-14*	5-21-09
	09:02	1.98 E7	0.1	278.8	2.99 E-14	4.64 E-13	10:02
	14:32		1.3	1.7			MWK
PNV-AS-SU14-TP002, SU16-TP002,	5-20-09		0.2	281.9	*<MDA*	*<MDA*	5-21-09
SU16-TP001 Damon Deville	11:00	8,400 ml	0.1	278.8	7.04 E-11	1.09 E-9	10:22
	18:56		0.1				MWK

Note: 10 minute background and air sample counts performed.

Counting Instrument Used: Ludlum Model 3030 **Serial Number:** 247862 **Date of Calibration:** 4-22-2009

Alpha Efficiency: 34.04% **Beta Efficiency:** 39.54%

$$Alpha\ \mu Ci/ml = \frac{Net\ alpha\ cpm\ x\ 4.505\ E-7}{0.3404\ x\ Volume\ (ml))}$$

$$Beta\ \mu Ci/ml = \frac{Net\ beta\ cpm\ x\ 4.505\ E-7}{0.3954\ x\ Volume\ (ml))}$$

$$MDA\ \mu Ci/ml = \frac{3+4.65\sqrt{BKGD_{cpm}}}{(eff)(volume\ ml)(Count\ Time_{sample})} x4.505E-7$$

Laboratory Air Monitoring Results

2609 North River Road, Port Allen, Louisiana 70767
(800) 401-4277 -- FAX (225) 381-2996

American Radiation Services, Inc.

Laboratory Analysis Report

ARS1-09-01602

Prepared for:

Painesville FUSRAP Site

Steve Shirley
2609 North River Road
Port Allen, LA 70767-3469

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Project Manager Review

Management Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

Contact Person: Questions regarding this analytical report should be addressed to:

Project Manager

ProjectManagers@amrad.com

Phone: 225.381.2991
Fax: 225.381.2996

LELAP Cert# 30658 **NELAP Cert# E87558**

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01602
Analysis Description: Gross Alpha/Beta in [Air Filters, AF)
Analysis Test Method: ARS-003/EPA 900.0M

Request or PO Number: N/A
Date Received: 6/4/2009
Report Date: 06/12/09 09:34

ARS Sample ID	Client Sample ID	Isotope	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery	Sample Matrix
ARS1-09-01602-001	PNV-AS-SU20-TP002-51509	GROSS ALPHA	3.229E-15	2.151E-15	5.766E-15	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-001	PNV-AS-SU20-TP002-51509	GROSS BETA	6.478E-14	8.775E-15	1.909E-14	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-002	PNV-AS-SU19-TP002-51509	GROSS ALPHA	3.476E-15	3.018E-15	9.930E-15	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-002	PNV-AS-SU19-TP002-51509	GROSS BETA	1.060E-13	1.487E-14	3.975E-14	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-003	PNV-AS-51509-SITE BOUNDARY DOWNWIND	GROSS ALPHA	1.991E-14	8.945E-15	1.922E-14	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-003	PNV-AS-51509-SITE BOUNDARY DOWNWIND	GROSS BETA	1.645E-13	2.203E-14	3.634E-14	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-004	PNV-AS-51509-SITE BOUNDARY UPWIND	GROSS ALPHA	0.000E+00	3.645E-15	1.846E-14	N/A	uCi/mL	6/11/2009	JLA	N/A	AF
ARS1-09-01602-004	PNV-AS-51509-SITE BOUNDARY UPWIND	GROSS BETA	9.435E-14	1.290E-14	2.844E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-005	PNV-AS-SU15-TP002-51609	GROSS ALPHA	2.596E-14	4.116E-14	1.657E-13	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-005	PNV-AS-SU15-TP002-51609	GROSS BETA	8.516E-13	1.160E-13	2.395E-13	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-006	PNV-AS-SU14-TP003-51609	GROSS ALPHA	8.053E-14	7.203E-14	2.519E-13	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-006	PNV-AS-SU14-TP003-51609	GROSS BETA	1.667E-12	2.259E-13	4.655E-13	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-007	PNV-AS-51609-SITE BOUNDARY UPWIND	GROSS ALPHA	2.104E-14	1.454E-14	4.393E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-007	PNV-AS-51609-SITE BOUNDARY UPWIND	GROSS BETA	2.604E-13	3.540E-14	7.821E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-008	PNV-AS-51609-SITE BOUNDARY DOWNWIND	GROSS ALPHA	4.614E-15	1.033E-14	4.716E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-008	PNV-AS-51609-SITE BOUNDARY DOWNWIND	GROSS BETA	2.781E-13	3.796E-14	8.266E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-009	PNV-AS-SU21-TP001-51609	GROSS ALPHA	6.075E-15	9.390E-15	4.339E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-009	PNV-AS-SU21-TP001-51609	GROSS BETA	3.035E-13	4.134E-14	9.867E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-010	PNV-AS-51609-SITE BOUNDARY UPWIND	GROSS ALPHA	1.077E-14	6.051E-15	1.398E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-010	PNV-AS-51609-SITE BOUNDARY UPWIND	GROSS BETA	1.383E-13	1.918E-14	4.556E-14	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-011	PNV-AS-51609-SITE BOUNDARY DOWNWIND	GROSS ALPHA	2.888E-12	2.387E-12	7.937E-12	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-011	PNV-AS-51609-SITE BOUNDARY DOWNWIND	GROSS BETA	5.220E-11	7.077E-12	1.501E-11	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-012	PNV-AS-SU14-TP003-51609 DAMON DEVILLE	GROSS ALPHA	3.353E-12	6.135E-12	2.594E-11	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-012	PNV-AS-SU14-TP003-51609 DAMON DEVILLE	GROSS BETA	-4.968E-12	2.131E-12	3.997E-11	N/A	uCi/mL	6/11/09 15:35	JLA	N/A	AF
ARS1-09-01602-013	PNV-AS-SU21-TP001-51609 DAMON DEVILLE	GROSS ALPHA	-7.314E-13	1.717E-12	9.339E-12	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-013	PNV-AS-SU21-TP001-51609 DAMON DEVILLE	GROSS BETA	3.839E-13	8.044E-13	1.350E-11	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-014	PNV-AS-SU15-TP002-51609 DAMON DEVILLE	GROSS ALPHA	-5.017E-12	8.527E-12	5.491E-11	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-014	PNV-AS-SU15-TP002-51609 DAMON DEVILLE	GROSS BETA	1.232E-11	6.183E-12	1.015E-10	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-015	PNV-AS-SU14-TP003-51609 DAMON DEVILLE	GROSS ALPHA	-6.987E-11	2.971E-11	4.376E-10	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-015	PNV-AS-SU14-TP003-51609 DAMON DEVILLE	GROSS BETA	-7.957E-11	3.806E-11	7.791E-10	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-016	PNV-AS-SU21-TP001-51609 DAMON DEVILLE	GROSS ALPHA	6.877E-11	7.452E-11	2.811E-10	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-016	PNV-AS-SU21-TP001-51609 DAMON DEVILLE	GROSS BETA	-2.375E-11	2.695E-11	4.928E-10	N/A	uCi/mL	6/11/09 16:02	JLA	N/A	AF
ARS1-09-01602-017	PNV-AS-SU15-TP002-51609	GROSS ALPHA	-2.820E-14	2.022E-14	4.029E-13	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01602-017	PNV-AS-SU15-TP002-51609	GROSS BETA	3.777E-13	7.874E-14	9.162E-13	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF

NOTES: CONTRACT #: W912P4-07-D-0009/METHOD OF SHIPMENT:HAND CARRY

C. Bullegny

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

ARS INTERNATIONAL

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Notes:

Comments:

1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.
3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "m" to the procedure number (i.e. 900.0M).
4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B.
5.0) **Total activity** is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only).
7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only).
8.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).
9.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected.

Method References:

1.0) **EPA 600/4-80-032**; Prescribed Procedures for the Measurements of Radioactivity in Drinking Water, August 1980.
2.0) Standard Methods for Examination of Water and Waste Water, 18th, 1992.
3.0) **EPA SW-846**; Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995).
4.0) **EPA 600/4/79-020**; Methods for Chemical Analysis of Water and Waste, March 1983.
5.0) **HASL 300**
6.0) **ARS-040**; An LCSD is not reported with this process. The criteria for the LCS/LCSD analysis for reproducibility have not been established for Low Level Tritium analysis. A prepared standard for Low Level Tritium has not been developed. As a result, the standard we use is based on the dilution of a verified conventional tritium standard. The volume required for Low Level Tritium analysis, in addition to the lack of an available Low Level Tritium standard, introduce variability into the LCS/LCSD analysis that does not represent the actual sample analysis. The preferred measure for reproducibility is to run a duplicate analysis of a sample.

Definitions:

1.0)	**ND**	Not detected above the detection limit (non-detect).
2.0)	**MDC**	(Minimum Detectable Concentration) minimum concentration of the analyte that ARS can detect utilizing the specific analysis
3.0)	**MBL**	Method Blank
4.0)	**DO**	Duplicate Original
5.0)	**DUP**	Method Duplicate
6.0)	**MS/MSD**	Matrix Spike/Matrix Spike Duplicate
7.0)	**S**	Spike
8.0)	**RS**	Reference Spike
9.0)	***SC**	Subcontracted out to another qualified laboratory
10.0)	**NR**	Not Referenced
11.0)	**N/A**	Not Applicable
12.0)	*	Reported as a calculated value
13.0)	**	False Positive due to interference from Bi-214
14.0)	**U**	Activity is below the MDC
15.0)	**LCS/LCSD**	Laboratory Control Standard/Laboratory Control Standard Duplicate

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PNV[illegible]
COC No.

Company Name: ARS International
Client Contact: Project Management
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Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: USCOE-09027-00003
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	Gross Alpha	Gross Beta						
01	5/15/09	1420	PNV-AS-SU20-TP002-51509	1	AF	N/A	X	X						
02	5/15/09	1740	PNV-AS-SU19-TP002-51509	1	AF	N/A	X	X						
03	5/15/09	1750	PNV-AS-51509-Site Boundary Downwind	1	AF	N/A	X	X						
04	5/15/09	1745	PNV-AS-51509-Site Boundary Upwind	1	AF	N/A	X	X						
05	5/16/09	0935	PNV-AS-SU15-TP002-51609	1	AF	N/A	X	X						
06	5/16/09	1020	PNV-AS-SU14-TP003-51609	1	AF	N/A	X	X						
07	5/16/09	1130	PNV-AS-51609-Site Boundary Upwind	1	AF	N/A	X	X						
08	5-16-09	1135	PNV-AS-51609-Site Boundary Downwind	1	AF	N/A	X	X						
09	5/16/09	1130	PNV-AS-SU21-TP001-51609	1	AF	N/A	X	X						
10	5/16/09	1610	PNV-AS-51609-Site Boundary Upwind	1	AF	N/A	X	X						
11	5/16/09	1615	PNV-AS-51609-Site Boundary Downwind	1	AF	N/A	X	X						
12	5/16/09	1311	PNV-AS-SU14-TP003-51609 Damon Deville	1	AF	N/A	X	X						
13	5/16/09	1348	PNV-AS-SU21-TP001-51609 Damon Deville	1	AF	N/A	X	X						
14	5/16/09	1440	PNV-AS-SU15-TP002-51609 Damon Deville	1	AF	N/A	X	X						
15	5/16/09	1556	PNV-AS-SU14-TP003-51609 Damon Deville	1	AF	N/A	X	X						
16	5/16/09	1659	PNV-AS-SU21-TP001-51609 Damon Deville	1	AF	N/A	X	X						
17	5/16/09	1105	PNV-AS-SU15-TP002-51609 ~~Damon Deville~~ [illegible]	1	AF	N/A	X	X						
18														

Method of Shipment: Hand carry
Date & Time of Shipment:
Courier:
Air Bill Number:

Special Instructions:

Samplers Name (Print):
Samplers Signature:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	6-4-09	10:15	[signature]	6-4-09	1400
Printed Name						
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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American Radiation Services, Inc.

Laboratory Analysis Report

ARS1-09-01603

Prepared for:

Painesville FUSRAP Site

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Project Manager Review | **Management Review**

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LELAP Cert# 30658 **NELAP Cert# E87558**

ARS INTERNATIONAL

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ARS Sample Delivery Group: ARS1-09-01603
Analysis Description: Gross Alpha/Beta in [Air Filters, AF)
Analysis Test Method: ARS-003/EPA 900.0M

Request or PO Number: N/A
Date Received: 6/4/2009
Report Date: 06/12/09 16:46

ARS Sample ID	Client Sample ID	Isotope	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery	Sample Matrix
ARS1-09-01603-001	PNV-AS-SU14-TP001-51709, SU15-TPP001-51709	GROSS ALPHA	2.187E-14	1.457E-14	3.906E-14	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01603-001	PNV-AS-SU14-TP001-51709, SU15-TPP001-51709	GROSS BETA	4.129E-13	5.699E-14	1.273E-13	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01603-002	PNV-AS-51709-SITE BOUNDARY UPWIND	GROSS ALPHA	2.884E-15	3.631E-15	1.472E-14	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01603-002	PNV-AS-51709-SITE BOUNDARY UPWIND	GROSS BETA	1.139E-13	1.532E-14	2.782E-14	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01603-003	PNV-AS-51709-SITE BOUNDARY DOWNWIND	GROSS ALPHA	0.000E+00	3.756E-15	1.902E-14	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01603-003	PNV-AS-51709-SITE BOUNDARY DOWNWIND	GROSS BETA	1.225E-13	1.653E-14	2.931E-14	N/A	uCi/mL	6/11/09 16:37	JLA	N/A	AF
ARS1-09-01603-004	PNV-AS-SU14-TP002, SU16-TP0002,SU16-TP001	GROSS ALPHA	2.747E-14	1.830E-14	4.905E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-004	PNV-AS-SU14-TP002, SU16-TP0002,SU16-TP001	GROSS BETA	5.553E-13	7.402E-14	1.115E-13	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-005	PNV-AS-51809 SITE BOUNDARY UPWIND	GROSS ALPHA	1.379E-15	2.131E-15	9.849E-15	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-005	PNV-AS-51809 SITE BOUNDARY UPWIND	GROSS BETA	1.142E-13	1.567E-14	3.209E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-006	PNV-AS-51809 SITE BOUNDARY DOWNWIND	GROSS ALPHA	4.237E-15	3.804E-15	1.327E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-006	PNV-AS-51809 SITE BOUNDARY DOWNWIND	GROSS BETA	8.125E-14	1.103E-14	2.396E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-008	PNV-AS-SU16-TP002-51809	GROSS ALPHA	1.607E-14	2.939E-14	1.243E-13	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-008	PNV-AS-SU16-TP002-51809	GROSS BETA	5.584E-13	7.701E-14	1.915E-13	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-009	PNV-AS-SU16-TP001-51809	GROSS ALPHA	-1.497E-14	1.094E-14	7.649E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-009	PNV-AS-SU16-TP001-51809	GROSS BETA	4.434E-13	6.001E-14	1.105E-13	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-010	PNV-AS-51909-SITE BOUNDARY UPWIND	GROSS ALPHA	5.140E-15	3.551E-15	1.073E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-010	PNV-AS-51909-SITE BOUNDARY UPWIND	GROSS BETA	1.080E-13	1.446E-14	2.311E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-011	PNV-AS-51909-SITE BOUNDARY DOWNWIND	GROSS ALPHA	8.481E-15	4.331E-15	1.062E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-011	PNV-AS-51909-SITE BOUNDARY DOWNWIND	GROSS BETA	8.036E-14	1.079E-14	1.891E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-012	PNV-AS-SU20-TP001-51909	GROSS ALPHA	-3.296E-16	1.094E-15	6.737E-15	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-012	PNV-AS-SU20-TP001-51909	GROSS BETA	5.407E-14	7.265E-15	1.181E-14	N/A	uCi/mL	6/11/09 17:22	JLA	N/A	AF
ARS1-09-01603-013	PNV-AS-SU19-TP001-51909	GROSS ALPHA	-1.645E-15	1.180E-15	2.350E-14	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-013	PNV-AS-SU19-TP001-51909	GROSS BETA	2.186E-13	2.936E-14	5.344E-14	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-014	PNV-AS-SU19TP001, SU20TP001, 5-19-09 DAMON DEVILLE	GROSS ALPHA	-2.824E-12	2.025E-12	4.034E-11	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-014	PNV-AS-SU19TP001, SU20TP001, 5-19-09 DAMON DEVILLE	GROSS BETA	5.747E-12	8.828E-12	1.314E-10	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-015	PNV-AS-52009-SITE BOUNDARY UPWIND	GROSS ALPHA	-2.805E-16	1.298E-16	2.004E-15	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-015	PNV-AS-52009-SITE BOUNDARY UPWIND	GROSS BETA	1.691E-14	2.267E-15	3.789E-15	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-016	PNV-AS-52009-SITE BOUNDARY DOWNWIND	GROSS ALPHA	0.000E+00	4.260E-16	2.158E-15	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-016	PNV-AS-52009-SITE BOUNDARY DOWNWIND	GROSS BETA	1.313E-14	1.777E-15	3.325E-15	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-017	PNV-AS-SU18-TP001-52009	GROSS ALPHA	2.163E-15	2.178E-15	7.892E-15	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-017	PNV-AS-SU18-TP001-52009	GROSS BETA	4.055E-14	5.525E-15	1.140E-14	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-018	PNV-AS-SU14-TP002, SU16-TP00, 52009 DAMON DEVILLE	GROSS ALPHA	1.128E-11	1.538E-11	6.174E-11	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF
ARS1-09-01603-018	PNV-AS-SU14-TP002, SU16-TP00, 52009 DAMON DEVILLE	GROSS BETA	6.926E-12	6.459E-12	1.141E-10	N/A	uCi/mL	6/11/09 17:50	JLA	N/A	AF

NOTES: CONTRACT#: W912P4-07-D-0009/METHOD OF SHIPMENT: HAND CARRY

C. Bulejz

Project Manager Review

H15

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the client.

LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road • Port Allen, Louisiana 70767
1 (800) 401-4277 • Fax (225) 381-2996

Notes:

Comments:

1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.
3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "m" to the procedure number (i.e. 900.0M).
4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B.
5.0) **Total activity** is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only).
7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only).
8.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).
9.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected.

Method References:

1.0) **EPA 600/4-80-032**; Prescribed Procedures for the Measurements of Radioactivity in Drinking Water, August 1980.
2.0) Standard Methods for Examination of Water and Waste Water, 18th, 1992.
3.0) **EPA SW-846**; Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995).
4.0) **EPA 600/4/79-020**; Methods for Chemical Analysis of Water and Waste, March 1983.
5.0) **HASL 300**
6.0) **ARS-040**; An LCSD is not reported with this process. The criteria for the LCS/LCSD analysis for reproducibility have not been established for Low Level Tritium analysis. A prepared standard for Low Level Tritium has not been developed. As a result, the standard we use is based on the dilution of a verified conventional tritium standard. The volume required for Low Level Tritium analysis, in addition to the lack of an available Low Level Tritium standard, introduce variability into the LCS/LCSD analysis that does not represent the actual sample analysis. The preferred measure for reproducibility is to run a duplicate analysis of a sample.

Definitions:

1.0)	**ND**	Not detected above the detection limit (non-detect).
2.0)	**MDC**	(Minimum Detectable Concentration) minimum concentration of the analyte that ARS can detect utilizing the specific analysis
3.0)	**MBL**	Method Blank
4.0)	**DO**	Duplicate Original
5.0)	**DUP**	Method Duplicate
6.0)	**MS/MSD**	Matrix Spike/Matrix Spike Duplicate
7.0)	**S**	Spike
8.0)	**RS**	Reference Spike
9.0)	***SC**	Subcontracted out to another qualified laboratory
10.0)	**NR**	Not Referenced
11.0)	**N/A**	Not Applicable
12.0)	*	Reported as a calculated value
13.0)	**	False Positive due to interference from Bi-214
14.0)	**U**	Activity is below the MDC
15.0)	**LCS/LCSD**	Laboratory Control Standard/Laboratory Control Standard Duplicate

Notes: ARS International assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of ARS International.

LELAP Cert# 30658 ***NELAP Cert# E87558***

ARS INTERNATIONAL
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Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

PNV[illegible]
COC No.

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: USCOE-09027-00003
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	Gross Alpha	Gross Beta						
01	5/17/09	1020	PNV-AS-SU14-TP001-51709, SU15-TP001-51709	1	AF	N/A	X	X						
02	5/17/09	1550	PNV-AS-51709-Site Boundary Upwind	1	AF	N/A	X	X						
03	5/17/09	1555	PNV-AS-51709-Site Boundary Downwind	1	AF	N/A	X	X						
04	5/17/09	1215	PNV-AS-SU14-TP002, SU16-TP002, SU16-TP001 Damon Deville	1	AF	N/A	X	X						
05	5/18/09	1810	PNV-AS-51809-Site Boundary Upwind	1	AF	N/A	X	X						
06	5/18/09	1800	PNV-AS-51809-Site Boundary Downwind	1	AF	N/A	X	X						
07	5/18/09	1230	PNV-AS-SU14-TP002-51809	1	AF	N/A	X	X						
08	5/18/09	1545	PNV-AS-SU16-TP002-51809	1	AF	N/A	X	X						
09	5/18/09	1820	PNV-AS-SU16-TP001-51809	1	AF	N/A	X	X						
10	5/19/09	1930	PNV-AS-51909-Site Boundary Upwind	1	AF	N/A	X	X						
11	5/19/09	1920	PNV-AS-51909-Site Boundary Downwind	1	AF	N/A	X	X						
12	5/19/09	1925	PNV-AS-SU20-TP001-51909	1	AF	N/A	X	X						
13	5/19/09	0900	PNV-AS-SU19-TP001-51909	1	AF	N/A	X	X						
14	5/19/09	1730	PNV-AS-SU19TP001, SU20TP001, 5-19-09 Damon Deville	1	AF	N/A	X	X						
15	5/20/09	1915	PNV-AS-52009-Site Boundary Upwind	1	AF	N/A	X	X						
16	5/20/09	1910	PNV-AS-52009-Site Boundary Downwind	1	AF	N/A	X	X						
17	5/20/09	1432	PNV-AS-SU18-TP001-52009	1	AF	N/A	X	X						
18	5/20/09	1856	PNV-AS-SU14-TP002, SU16-TP002, SU16-TP00, 52009 Damon Deville	1	AF	N/A	X	X						

Method of Shipment: Hand carry
Date & Time of Shipment:
Courier:
Air Bill Number:
Special Instructions:
Samplers Name (Print):
Samplers Signature:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	6-4-09	10:15	[signature]	6-4-09	1400
Printed Name						
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Radiological Survey Forms

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VEHICLE SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle License Plate Number	Company	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Surveyor Initials
PEZ 4994 (OHIO)	Bowser Morner	5-14-09	11:30	150	200	DTW
PGC 6658 (OHIO)	Bowser Morner	5-14-09	11:32	150	200	DTW
W 930837 LA	ARSEC	5-14-09	11:38	150	200	DTW
YSE 9904 PENN	ARSEC	5-14-09	11:42	150	200	JH
1310412941 (LA)	ARSEC	5-14-09	12:01	~~500~~ 200 JH 5-14-09	200	JH
YSE 9904 Penn	ARSEC	5-14-09	18:30	150	200	DL
1310412941 (LA)	ARSEC	5-14-09	18:47	170	200	JH
PEZ 4994 OHIO	ARSEC	5-14-09	19:15	180	190	DL
W 930837 (LA)	ARSEC	5-14-09	19:20	150	200	MK
1310429 4 (LA)	ARSEC	5-14-09	11:29	180	200	DL
W 930837 (LA)	ARSEC	5-15-09	11:35	170	200	DD
PEZ 4994 (OHIO)	Bowser Morner	5-15-09	11:41	160	200	DD
YSE 9904 (Penn)	ARSEC	5-15-09	11:38	175	210	JH

Z

VEHICLE SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle License Plate Number	Company	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Surveyor Initials
PGC 6658 (OHIO)	Bowser Morner	5-15-09	11:42	170	200	mk
PEZ 4994 (OHIO)	Bowser Morner	5-15-09	11:42	170	200	mk
PEZ 4994 (OHIO)	Bowser Morner	5-15-09	16:22	150	200	DTW
PGC 6658 OHIO	BOWSER MORNER	5-15-09	17:10	150	200	DTW
YSE 9904 PENN	ARSEC	5-15-09	17:35	200	210	JH
W 930 837 LA.	ARSEC	5-15-09	17:45	200	200	JH
13104294 LA.	ARSEC.	5-15-09	17:46	200	200	JH.
W 930 837 LA	ARSEC	5-16-09	13:15	180	210	JH
13104294 LA	ARSEC.	5-16-09	13:30	170	200	JH.
YSE 9904 (Penn)	ARSEC	5-16-09	13:31	200	200	mk
PEZ 4994 (OH)	Bowser Morner	5-16-09	13:40	155	200	mk
PGC 6658 (OH)	Bowser Morner	5-16-09	13:40	155	200	mk
		~~5-16-09~~ 5-16-09	~~13:40~~	DD		

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VEHICLE SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle License Plate Number	Company	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Surveyor Initials
W930834 LA	ARSEC	5-17-09	10:45	150	200	MK
YSE 9904 Penn	ARSEC	5-17-09	11:15	150	200	MK
PEZ 4994 OHIO	Bowser Morner	5-17-09	11:30	160	205	MK
PGC 6658 OHIO	Bowser Morner	5-17-09	11:30	160	200	MK
13104294 TEP LA	ARSEC	5-17-09	11:35	150	200	MK
YSE 9904 PENN	ARSEC	5-17-09	18:15	170	200	MK
13104294 LA	ARSEC	5-17-09	18:20	160	205	MK
PEZ 4994 OHIO	BOWSER MORNER	5-17-09	18:30	180	210	MK
PCC 6658 OHIO	BOWSER MORNER	5-17-09	18:30	180	200	MK
W 930834 LA	ARSEC	5-17-09	18:40	170	200	MK
G41191H (GOV)	USACE	5-18-09	09:00	180	200	JH
PEZ 4994 (OH)	Bowser Morner	5-18-09	11:53	180	200	MK
PGC 6658 (OH)	Bowser Morner	5-18-09	11:56	180	200	MK

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VEHICLE SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle License Plate Number	Company	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Surveyor Initials
W 930837 (LA)	ARSEC	5-18-09	12:05	160	210	mk
13104294 (LA)	ARSEC	5-18-09	12:07	170	210	mk
VSE 9904 (PA)	ARSEC	5-18-09	12:15	180	210	mk
DZE 8548 OHIO	PERSONAL ARSEC	5-18-09	0845	180	200	mk
G41 1491H GOV	USAGE	5-18-09	11:53	180	200	mk
PFV 3385 OHIO	LAKE COUNTY OIL	5-18-09	12:32	170	210	mk
PEZ 4994 OHIO	BOWSER MORNER	5-18-09	17:00	180	200	mk
PCC 6658 OHIO	BOWSER MORNER	5-18-09	17:05	200	210	mk
W 930837 LA	ARSEC	5-18-09	18:10	140	220	mk
13104294 temp LA	ARSEC	5-18-09	18:30	160	210	mk
VSE 9904 PENN	ARSEC	5-18-09	19:10	170	230	mk
W 930837 LA	ARSEC	5-19-09	11:40	180	210	mk
13104294 temp LA	ARSEC	5-19-09	11:45	180	200	mk

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VEHICLE SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle License Plate Number	Company	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Surveyor Initials
YSE 9904 Penn	ARSEC	5-19-09	12:00	160	200	MK
PEZ 6658 OHIO	Browser Morner	5-19-09	11:30	150	220	MK
PGC 4994 OHIO	Browser Morner	5-19-09	11:31	160	210	MK
565540 OHIO	EPA	5-19-09	11:37	140	230	JH
565540 OHIO	EPA	5-19-09	15:20	170	220	ES
AHD 7602 NY	USAGE	5-19-09	16:05	180	210	JH
YSE 9904 PENN	ARSEC	5-19-09	17:00	160	200	MK
13104294 TEMP LA	ARSEC	5-19-09	17:30	160	200	MK
W 930837 LA	ARSEC	5-19-09	17:35	170	210	MK
PEZ 4994 OHIO	BROWSER MORNER	5-19-09	18:40	180	220	MK
PGC 6658 OHIO	BROWSER MORNER	5-19-09	18:50	150	200	MK
13104294 LA	ARSEC	5-20-09	10:55	160	200	ES
W 930837 LA	ARSEC	5-20-09	11:07	140	210	MK

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VEHICLE SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle License Plate Number	Company	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Surveyor Initials
PEZ 4994 OHIO	ARSEC	5-20-09	11:07	180	210	MK
PGC 6658 OHIO	Browser Morner	5-20-09	11:35	150	200	MK
YSE 9904 Penn	Browser morner	5-20-09	11:35	160	200	MK
13104294 LA	ARSEC	5-20-09	17:30	170	210	ES
YSE 9904 PENN	ARSEC	5-20-09	17:45	160	200	ES
PEZ 4994 OHIO	BROWSER MORNER	5-20-09	18:05	200	200	ES
PGC 6658 OHIO	BROWSER MORNER	5-20-09	18:07	150	230	ES
W930837 LA	ARSEC	5-20-09	19:00	180	200	ES
	No Further Entries This Page					

HEAVY EQUIPMENT SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle Description	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Smear Reading (cpm/100cm^2)	Surveyor Initials
Drill Rig Sy 17 SB002	5-14-09	1200	150	150	150	PF
Drill Rig Sy 17 SB005	5-15-09	1400	150	150	150	PF
Drill Rig Sy 13 SB002	5-15-09	1730	150	150	150	PF
Drill Rig Sy 13 SB001	5-16-09	0830	150	150	150	PF
Drill Rig Sy 13 SB003	5-16-09	1300	150	150	150	PF
Drill Rig Sy 13 SB004	5-16-09	1400	150	150	150	PF
Drill Rig Sy 22 SB006	5-17-09	0800	150	150	150	PF
Drill Rig Sy 22 SB004	5-18-09	0600	150	150	150	PF
Drill Rig Sy 22 SB007	5-18-09	1115	150	150	150	PF
Drill Rig Sy 23 SB004	5-18-09	1215	150	150	150	PF
Drill Rig Sy 23 SB003	5-18-09	1700	150	150	150	PF
Drill Rig Sy 22 SB003	5-18-09	1800	150	150	150	PF
Drill Rig Sy 25 SB001	5-19-09	0600	150	150	150	PF

HEAVY EQUIPMENT SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle Description	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Smear Reading (cpm/100cm^2)	Surveyor Initials
Drill Rig Su 25 SB002	5-19-09	0800	150	150	150	PF
Drill Rig Su 26 SB 002	5-19-09	1200	150	150	150	PF
Drill Rig Su 26 SB003	5-19-09	1600	150	150	150	PF
Drill Rig Su 23 SB 006	5-20-09	0630	150	150	150	PF
Drill Rig Su 23 SB 005	5-20-09	0800	150	150	150	PF
Drill Rig Su 23 SB001	5-20-09	1000	150	150	150	PF
Drill Rig Su 23 SB002	5-20-09	1300	150	150	150	PF
Drill Rig Su 1 SB002	5-20-09	1500	150	150	150	PF
Drill Rig Su1 SB001	5-20-09	1615	150	150	150	PF
Drill Rig Su 2 SB002	5-21-09	0615	150	150	150	PF
Drill Rig Su 2 SB 001	5-21-09	1200	150	150	150	PF
Drill Rig Su2 SB003	5-21-09	1430	150	150	150	PF
	No Further Entries This Page					

HEAVY EQUIPMENT SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle Description	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Smear Reading (cpm/100cm^2)	Surveyor Initials
Back hoe Su 20 TP2	5-15-09	11:30 am	150	150	150	DD
Back hoe Su 19 TP2	5-15-09	4:30 pm	150	150	150	DD
Backhoe Su 15 TP2	5-16-09	10:30 Am	150	150	150	DD
Backhoe Su 14 TP1	5-16-09	12:30 pm	150	150	150	DD
Backhoe Su 14 TP3	5-16-09	3:30 pm	150	150	150	DD
Backhoe Su 15 TP1	5-17-09	2:00 pm	150	150	150	DD
Backhoe Su 14 TP1	5-17-09	3:30 pm	150	150	150	DD
Backhoe Su 19 TP3	5-17-09	4:30 pm	150	150	150	DD
Backhoe Su 14 TP2	5-18-09	10:30 Am	150	150	150	DD
Backhoe Su 16 TP2	5-18-09	3:00 pm	150	150	150	DD
Backhoe Su 16 TP1	5-18-09	4:30 pm	150	150	150	DD
Backhoe Su 19 TP1	5-19-09	10:00 Am	150	150	150	DD
Backhoe Su 20 TP1	5-19-09	3:00 pm	150	150	150	DD

HEAVY EQUIPMENT SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle Description	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Smear Reading (cpm/100cm^2)	Surveyor Initials
Backhoe SU18 TP1	5-19-09	5:50pm	150	150	150	DD
Backhoe SU18 TP2	5-20-09	11:30AM	150	150	150	DD
Backhoe SU15 TP3	5-20-09	5:30pm	150	150	150	DD

No Further Entries This Page

HEAVY EQUIPMENT SURVEY LOG

for Pre-Remediation Volume Uncertainty Reduction Subsurface Soil Sampling at the Painesville FUSRAP Site Health Physicist Services

Lake County, Ohio

Contract Number: W912P4-07-D-0009, D.O. 0002

Vehicle Description	Date	Time	Background (cpm)	Maximum Frisk Reading (cpm)	Smear Reading (cpm/100cm^2)	Surveyor Initials
Bobcat	5-22-09	5:30pm	150	150	150	DD
Drillers Rig Decon Pad	5-22-09	5:45pm	150	150	150	DD
Supply Conex Box	5-22-09	6:00pm	150	150	150	DD
Office Conex Box	5-22-09	6:20pm	150	150	150	DD

No Further Entries This Page

FUSRAP Survey Cover Sheet

1. General Information

Survey No. _____ Page(s) 1 of 3

Tech(s): Pete Freeman Site: **Painesville, OH**

Date: 7/3/2009

2. Item Surveyed

LSA Boxes

3. Release Limits

Uranium 238:

Total Alpha: 5000dpm/100cm2 *Removable Alpha:* 1000dpm/100cm2

Total Beta/Gamma: 5000 dpm/100cm2 *Removable Beta/Gamma*: 1000dpm/100 cm2

Thorium-230: *Total Alpha:* 100 dpm/100cm2 *Removable Alpha:* 20 dpm/100cm2

Total Beta/gamma: 5000 dpm/100cm2 *Removable Beta/Gamma:* 1000dpm/100cm2

4. Backgrounds are Determined by the Following Methods

Dose rate: Taken adjacent to survey area at 1 meter above ground surface

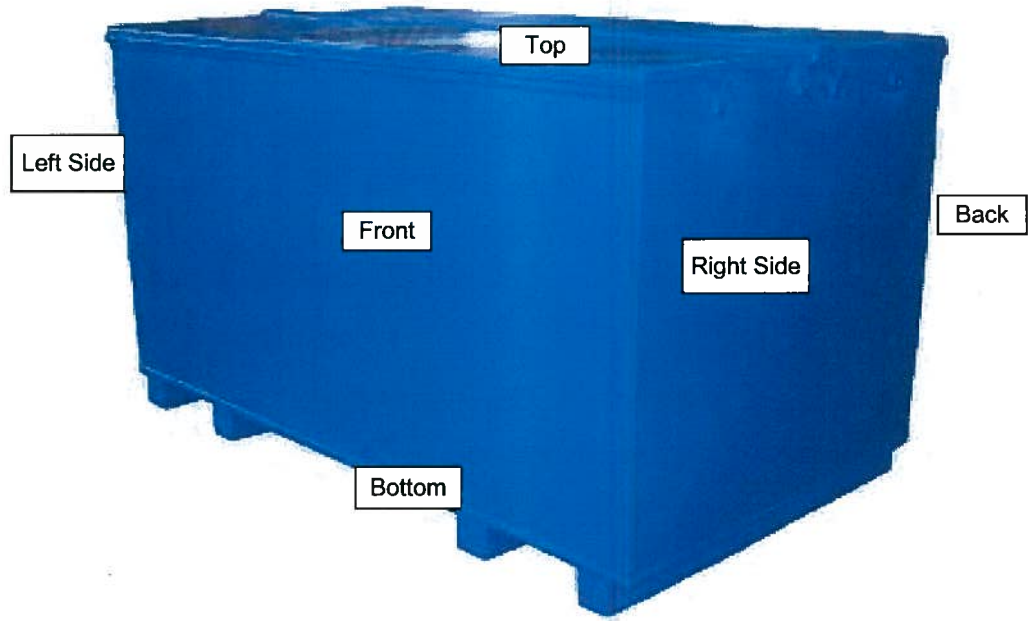
Total: Taken adjacent to survey area for 1min

Removable: For Model 2929 Daily 60min Bkg counts For Protean Daily 10 min bkg cts

5. Survey Type/Data Codes

- [ ] Routine Surveys (RS)
- [ ] Special (SP) (incoming)
- [ ] Characterization Surveys (CH)
- [ ] Final Status (MS)
- [X] Shipping Surveys (SS)
- [ ] Incoming
- [ ] Unrestricted Release Surveys (UR)---Release to:_____

7. Survey Drawing/Description/Comments



Typical LSA Box used for documentation purposes only

RSO Review: Date:

FUSRAP Survey Data Sheet

Survey No:		Page 2 of 3	Comments: LSA Box Survey
Survey Tech(s):	Pete Freeman	Count Date:	7/6/2009
Survey Date:	7/3/2009	Count Tech:	Adrian Segarra

Notes:
ACF = Area Correction Factor
t_S = Sample Count Time
E = efficiency = cpm/dpm
cpm = counts per min
* dpm readings are per 100cm^2
dose rt (microR/hr) = Direct Reading Instr.

Background determination on coversheet
t_B = Background Count Time
BKG= Total Background Counts

Direct
Alpha (dpm) = (cpm - Bcpm)/(eff * ACF)
Beta (dpm) = (cpm - Bcpm)/(eff * ACF)
Removable
Alpha (dpm) = (cpm - Bcpm)/ eff
Beta (dpm) = (cpm - Bcpm)/ eff

cpm cutoff-calculations on coversheet

Instrument(s)	Dose Rate	Gamma Survey	Removable	
Instr.Model No.	M-19	2221 / 44-10	Protean	
Instr.Serial No.	247436	152194	220319	
Instr.Cal Due Date	4/16/2009	8/4/2009	3/30/2010	
Probe Serial No.		242854		
Probe Cal Due Date		8/4/2009		
Parameters	Dose rate	Gamma	Alpha	Beta
E			0.1806	0.2209
BKG Counts	5 µR/hr	9,641 cpm	0.8	7.8
ACF			1.00	1.00
t_B		1(min)	10	10
t_S		1(min)	2	2
L_c			6.31	19.70
MDC			20.93	47.72

No.	Descriptions	microR/hr	cpm	Counts	DPM	Counts	DPM
1	LSA Box #01 Top	7	9,463	1	<MDC	1	<MDC
2	LSA Box #01 Front	6	10,981	0	<MDC	1	<MDC
3	LSA Box #01 Right Side	7	8,748	0	<MDC	5	<MDC
4	LSA Box #01 Bottom	5	8,436	0	<MDC	2	<MDC
5	LSA Box #01 Left Side	8	9,772	2	<MDC	2	<MDC
6	LSA Box #01 Back	8	10,011	0	<MDC	0	<MDC
7	LSA Box #02 Top	9	10,640	1	<MDC	3	<MDC
8	LSA Box #02 Front	8	9,872	1	<MDC	4	<MDC
9	LSA Box #02 Right Side	7	9,768	0	<MDC	7	<MDC
10	LSA Box #02 Bottom	7	8,691	0	<MDC	1	<MDC
11	LSA Box #02 Left Side	8	9,347	1	<MDC	0	<MDC
12	LSA Box #02 Back	7	8,369	0	<MDC	1	<MDC
13	LSA Box #03 Top	6	8,092	0	<MDC	1	<MDC
14	LSA Box #03 Front	6	9,007	0	<MDC	5	<MDC
15	LSA Box #03 Right Side	8	9,393	0	<MDC	1	<MDC
16	LSA Box #03 Bottom	7	9,180	0	<MDC	2	<MDC
17	LSA Box #03 Left Side	7	8,992	0	<MDC	2	<MDC
18	LSA Box #03 Back	9	9,986	1	<MDC	1	<MDC
19							

$L_c = \frac{1.645\sqrt{R_b \cdot t_s(1+t_s/t_B)}}{E * t_s * ACF}$

$MDC = \frac{3+3.29\sqrt{Rb \cdot ts(1+tS/tB)}}{E * tS * ACF}$

(INI)

Protean
Serial # 2203/9
Cal Due 3/30/10

2M60R6

SN	RPT	ID	ALPHA COUNTS	ALPHA NET CPM	ALPHA DPM	ALPHA LIMITS	BETA COUNTS	BETA NET CPM	BETA DPM	BETA LIMITS	DATE	TIME
			Eff: 16.06% Bkg: 0.08 cpm MDA: 11.22 dpm				Eff: 22.09% Bkg: 0.78 cpm MDA: 15.62 dpm					
001	00	LSA BOXS	1	0.42	2.33		1	-0.43	-1.95		07-06-2009	08:08:17
002	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	08:10:47
003	00		0	-0.08	-0.44		5	1.72	7.79		07-06-2009	08:13:17
004	00	Box #1	0	-0.08	-0.44		2	0.22	1.00		07-06-2009	08:15:48
005	00		2	0.92	5.09		2	-0.11	-0.50		07-06-2009	08:18:19
006	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	08:20:50
007	00		1	0.42	2.33		3	0.57	2.57		07-06-2009	08:23:20
008	00		1	0.42	2.33		4	1.07	4.84		07-06-2009	08:25:50
009	00		0	-0.08	-0.44		7	2.72	12.31		07-06-2009	08:28:20
010	00	Box #2	0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	08:30:50
011	00		1	0.42	2.33		0	-0.93	-4.22		07-06-2009	08:33:20
012	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	08:35:50
013	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	08:38:20
014	00		0	-0.08	-0.44		5	1.72	7.79		07-06-2009	08:40:50
015	00	Box #3	0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	08:43:20
016	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	08:45:50
017	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	08:48:20
018	00		1	0.42	2.33		1	-0.43	-1.95		07-06-2009	08:50:50

FUSRAP Survey Cover Sheet

1. General Information

Survey No. _____ Page(s) 1 of 4

Tech(s): Pete Freeman Site: **Painesville, OH**

Date: 7/3/2009

2. Item Surveyed

55 Gallon Drums

3. Release Limits

Uranium 238:

Total Alpha: 5000dpm/100cm2 *Removable Alpha:* 1000dpm/100cm2

Total Beta/Gamma: 5000 dpm/100cm2 *Removable Beta/Gamma*: 1000dpm/100 cm2

Thorium-230: *Total Alpha:* 100 dpm/100cm2 *Removable Alpha:* 20 dpm/100cm2

Total Beta/gamma: 5000 dpm/100cm2 *Removable Beta/Gamma:* 1000dpm/100cm2

4. Backgrounds are Determined by the Following Methods

Dose rate: Taken adjacent to survey area at 1 meter above ground surface

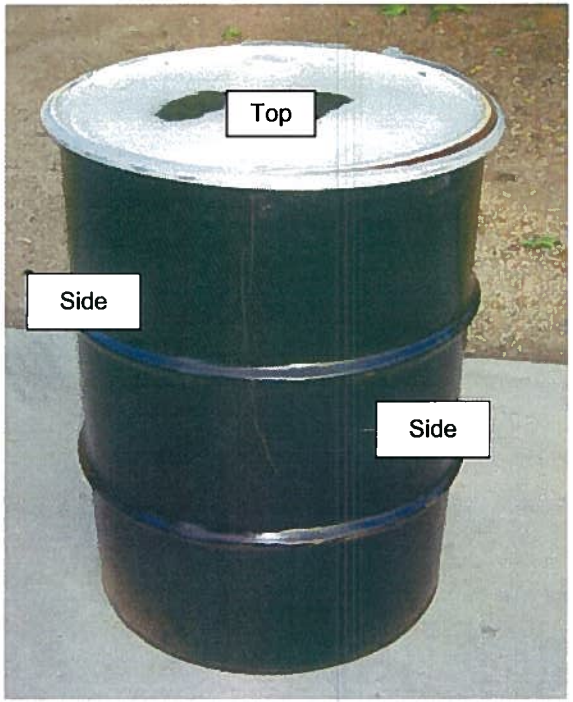
Total: Taken adjacent to survey area for 1min

Removable: For Model 2929 Daily 60min Bkg counts For Protean Daily 10 min bkg cts

5. Survey Type/Data Codes

- [ ] Routine Surveys (RS)
- [ ] Special (SP) (incoming)
- [ ] Characterization Surveys (CH)
- [ ] Final Status (MS)
- [X] Shipping Surveys (SS)
- [ ] Incoming
- [ ] Unrestricted Release Surveys (UR)---Release to:_____

7. Survey Drawing/Description/Comments



Typical Drum used for documentation purposes only

RSO Review: Date:

H-1

FUSRAP Survey Data Sheet

Survey No:		Page 2 of 4	Comments:
Survey Tech(s):	Pete Freeman	Count Date: 7/6/2009	55 Gallon Drum Survey
Survey Date:	7/3/2009	Count Tech: Adrian Segarra	

Notes:
ACF = Area Correction Factor
t_S = Sample Count Time
E = efficiency = cpm/dpm
cpm = counts per min
* dpm readings are per 100cm^2
dose rt (microR/hr) = Direct Reading Instr.

Background determination on coversheet
t_B = Background Count Time
BKG= Total Background Counts

Removable
Alpha (dpm) = (cpm - Bcpm)/ eff
Beta (dpm) = (cpm - Bcpm)/ eff

Instrument(s)	Dose Rate	Gamma Survey	Removable	
Instr.Model No.	M-19	2221 / 44-10	Protean	
Instr.Serial No.	247436	152194	220319	
Instr.Cal Due Date	4/16/2009	8/4/2009	3/30/2010	
Probe Serial No.		242854		
Probe Cal Due Date		8/4/2009		
Parameters	**Dose rate**	**Gamma**	**Alpha**	**Beta**
E			0.1806	0.2209
BKG Counts	5 µR/hr	9,641 cpm	0.08	0.78
ACF			1.00	1.00
t_B		1(min)	10	10
t_S		1(min)	2	2
L_c			6.31	19.70
MDC			20.93	47.72

No.	Descriptions	microR/hr	cpm	counts	dpm	counts	dpm
1	Drum #01 Top	6	5,802	0	<MDC	1	<MDC
2	Drum #01 Side	5	6,941	0	<MDC	1	<MDC
3	Drum #01 Side	5	5,378	0	<MDC	2	<MDC
4	Drum #02 Top	5	6,147	0	<MDC	1	<MDC
5	Drum #02 Side	7	6,461	0	<MDC	1	<MDC
6	Drum #02 Side	6	5,983	0	<MDC	4	<MDC
7	Drum #03 Top	5	5,609	0	<MDC	0	<MDC
8	Drum #03 Side	6	5,976	0	<MDC	1	<MDC
9	Drum #03 Side	7	6,891	0	<MDC	0	<MDC
10	Drum #04 Top	6	6,972	0	<MDC	2	<MDC
11	Drum #04 Side	5	6,702	0	<MDC	1	<MDC
12	Drum #04 Side	7	5,947	0	<MDC	4	<MDC
13	Drum #05 Top	6	6,249	0	<MDC	3	<MDC
14	Drum #05 Side	8	7,003	0	<MDC	0	<MDC
15	Drum #05 Side	5	5,987	0	<MDC	0	<MDC
16	Drum #06 Top	6	6,079	0	<MDC	0	<MDC
17	Drum #06 Side	7	5,962	0	<MDC	2	<MDC
18	Drum #06 Side	7	5,734	0	<MDC	0	<MDC
19	Drum #07 Top	5	5,303	0	<MDC	2	<MDC

$$L_c = \frac{1.645\sqrt{R_b \cdot t_s(1 + t_s / t_B)}}{E * t_s * ACF}$$

$$MDC = \frac{3 + 3.29\sqrt{Rb \cdot ts(1 + tS / tB)}}{E * tS * ACF}$$

(INI)

FUSRAP Survey Data Sheet

Survey No. _____ Page 3 of 4

Technician(s): Pete Freeman Count Date: 7/6/2009

Date: 7/3/2009 Count Tech: Adrian Segarra

Comments: 55 Gallon Drum Survey

No.	Descriptions	Dose rate microR/hr	Gamma cpm	Removable Alpha counts	Removable Alpha dpm	Removable Alpha counts	Removable Alpha dpm
20	Drum #07 Side	6	5,875	0	<MDC	1	<MDC
21	Drum #07 Side	6	6,001	0	<MDC	1	<MDC
22	Drum #08 Top	5	5,993	0	<MDC	2	<MDC
23	Drum #08 Side	7	7,106	0	<MDC	1	<MDC
24	Drum #08 Side	5	6,457	0	<MDC	5	<MDC
25	Drum #09 Top	6	6,889	0	<MDC	3	<MDC
26	Drum #09 Side	7	7,206	0	<MDC	2	<MDC
27	Drum #09 Side	6	6,858	0	<MDC	1	<MDC
28	Drum #10 Top	6	6,997	0	<MDC	0	<MDC
29	Drum #10 Side	8	7,339	0	<MDC	0	<MDC
30	Drum #10 Side	8	7,007	0	<MDC	2	<MDC
31	Drum #11 Top	6	7,463	0	<MDC	2	<MDC
32	Drum #11 Side	7	6,989	0	<MDC	0	<MDC
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							

Lc= $\frac{1.645\sqrt{R_b \cdot t_s(1+t_s/t_B)}}{E * t_s * ACF}$ MDC = $\frac{3+3.29\sqrt{Rb \cdot ts(1+tS/tB)}}{E * tS * ACF}$

_____ (INI)

Protean
Serial No 220319
Cal Due 3/30/10

SMEARS

SN	RPT	ID	ALPHA COUNTS	ALPHA NET CPM	ALPHA DPM	ALPHA LIMITS	BETA COUNTS	BETA NET CPM	BETA DPM	BETA LIMITS	DATE	TIME
			Eff: 18.06% Bkg: 0.08 cpm MDA: 11.22 dpm				Eff: 22.09% Bkg: 0.78 cpm MDA: 15.62 dpm					
001	00	DRUMS	0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	05:41:38
002	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	05:44:09
003	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	05:46:40
004	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	05:49:10
005	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	05:51:41
006	00		0	-0.08	-0.44		4	1.22	5.52		07-06-2009	05:54:11
007	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	05:56:41
008	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	05:59:11
009	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:01:42
010	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:04:11
011	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	06:06:42
012	00		0	-0.08	-0.44		4	1.22	5.52		07-06-2009	06:09:13
013	00		0	-0.08	-0.44		3	0.72	3.26		07-06-2009	06:11:44
014	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:14:15
015	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:16:45
016	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:19:15
017	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:21:46
018	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:24:17
019	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:26:48
020	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	06:29:19
021	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	06:31:48
022	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:34:18
023	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	06:36:49
024	00		0	-0.08	-0.44		5	1.72	7.79		07-06-2009	06:39:18
025	00		0	-0.08	-0.44		3	0.72	3.26		07-06-2009	06:41:48
026	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:44:18
027	00		0	-0.08	-0.44		1	-0.28	-1.27		07-06-2009	06:46:48
028	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:49:18
029	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:51:48
030	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:54:18
031	00		0	-0.08	-0.44		2	0.22	1.00		07-06-2009	06:56:45
032	00		0	-0.08	-0.44		0	-0.78	-3.53		07-06-2009	06:59:18

Appendix I. Laboratory Analytical Reports

Summary Table of Soil Sample Results

Core Analytical Reports

Test Pit Analytical Reports

ARS Laboratory Radiological QA/QC Results

Core and Test Pit Sample Chain of Custodies

IDW abd RCRA Laboratory Analytical Reports

IDW and RCRA Sample Chain of Custodies

Summary Table of Soil Sample Results

Soil Boring Gross Gamma and Analytical Data

Sample I.D.	Gross Gamma Count Rate (cpm)	Ra-226 (pCi/g)	Ra-226 > BKGD (BKGD Value 1.42 pCi/g)	Th-230 (pCi/g)	Th-230 > BKGD (BKGD Value 2.56 pCi/g)	Th-232 (pCi/g)	Th-232 > BDGD (BKGD Value 1.53 pCi/g)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	Total Uranium (pCi/g)	Total Uranium > BKGD (BKGD Value 5.97 pCi/g)	SOR ($DCGL_w$)	SOR ($DCGL_{emc}$)
PNV-SO-SU1-SB001(6.0-7.0)	19,510	0.394	0.000	1.070	0.000	0.970	0.000	0.376	0.048	0.307	0.731	0.000	0.00	0.00
PNV-SO-SU1-SB001(7.0-8.0)	19,736	0.132	0.000	0.900	0.000	0.790	0.000	0.493	0.029	0.351	0.873	0.000	0.00	0.00
PNV-SO-SU1-SB001(8.0-9.0)	19,748	0.426	0.000	1.440	0.000	1.190	0.000	0.355	-0.010	0.192	0.537	0.000	0.00	0.00
PNV-SO-SU1-SB002(6.0-7.0)	19,276	0.903	0.000	1.240	0.000	0.970	0.000	0.244	-0.013	0.324	0.555	0.000	0.00	0.00
PNV-SO-SU1-SB002(7.0-8.0)	19,713	0.752	0.000	1.220	0.000	1.190	0.000	0.203	0.014	0.338	0.555	0.000	0.00	0.00
PNV-SO-SU1-SB002(8.0-9.0)	19,935	0.485	0.000	1.040	0.000	0.770	0.000	0.354	0.012	0.410	0.776	0.000	0.00	0.00
PNV-SO-SU2-SB001(9.0-10.0)	15,316	0.316	0.000	1.120	0.000	0.840	0.000	0.487	0.014	0.368	0.869	0.000	0.00	0.00
PNV-SO-SU2-SB001(10.0-11.0)	15,834	0.350	0.000	0.498	0.000	0.699	0.000	0.426	0.000	0.500	0.926	0.000	0.00	0.00
PNV-SO-SU2-SB001(11.0-12.0)	19,284	1.149	0.000	1.270	0.000	1.220	0.000	0.572	0.000	0.444	1.016	0.000	0.00	0.00
PNV-SO-SU2-SB002(9.0-10.0)	15,756	0.357	0.000	1.120	0.000	1.040	0.000	0.428	0.000	0.507	0.935	0.000	0.00	0.00
PNV-SO-SU2-SB002(10.0-11.0)	16,912	0.426	0.000	1.350	0.000	0.950	0.000	0.586	0.020	0.455	1.061	0.000	0.00	0.00
PNV-SO-SU2-SB002(11.0-12.0)	20,332	0.196	0.000	1.460	0.000	1.200	0.000	0.424	0.000	0.200	0.624	0.000	0.00	0.00
PNV-SO-SU2-SB003(6.0-7.0)	19,463	0.821	0.000	0.790	0.000	0.820	0.000	0.423	0.000	0.350	0.773	0.000	0.00	0.00
PNV-SO-SU2-SB003(7.0-8.0)	20,322	1.161	0.000	1.010	0.000	0.950	0.000	0.373	0.024	0.391	0.788	0.000	0.00	0.00
PNV-SO-SU2-SB003(8.0-9.0)	20,520	-0.244	0.000	0.840	0.000	0.990	0.000	0.460	0.020	0.413	0.893	0.000	0.00	0.00
PNV-SO-SU13-SB001(8.0-9.0)	19,922	0.527	0.000	0.656	0.000	4.791	3.261	0.530	0.000	0.337	0.867	0.000	0.54	0.41
PNV-SO-SU13-SB001(9.0-10.0)	20,488	0.396	0.000	0.423	0.000	1.065	0.000	0.531	0.059	0.526	1.116	0.000	0.00	0.00
PNV-SO-SU13-SB001(10.0-11.0)	20,208	-0.082	0.000	0.284	0.000	0.496	0.000	0.725	0.043	0.368	1.136	0.000	0.00	0.00
PNV-SO-SU13-SB002(6.0-7.0)	21,069	0.627	0.000	0.635	0.000	0.701	0.000	1.002	0.029	1.104	2.135	0.000	0.00	0.00
PNV-SO-SU13-SB002(7.0-8.0)	20,021	0.309	0.000	0.565	0.000	0.750	0.000	1.008	0.018	1.164	2.190	0.000	0.00	0.00
PNV-SO-SU13-SB002(8.0-9.0)	18,569	0.523	0.000	0.475	0.000	0.730	0.000	0.894	0.026	0.887	1.807	0.000	0.00	0.00
PNV-SO-SU13-SB003(7.0-8.0)	19,541	0.601	0.000	0.499	0.000	0.474	0.000	1.066	0.057	1.058	2.181	0.000	0.00	0.00
PNV-SO-SU13-SB003(8.0-9.0)	19,646	0.531	0.000	0.536	0.000	0.587	0.000	0.941	0.068	1.158	2.167	0.000	0.00	0.00
PNV-SO-SU13-SB003(9.0-10.0)	19,609	0.610	0.000	0.970	0.000	0.990	0.000	0.432	0.000	0.345	0.777	0.000	0.00	0.00
PNV-SO-SU13-SB004(7.0-8.0)	17,601	0.829	0.000	0.610	0.000	0.660	0.000	0.628	0.012	0.569	1.209	0.000	0.00	0.00
PNV-SO-SU13-SB004(8.0-9.0)	19,789	0.686	0.000	0.460	0.000	0.500	0.000	0.410	0.000	0.409	0.819	0.000	0.00	0.00
PNV-SO-SU13-SB004(9.0-10.0)	18,615	1.912	0.492	0.560	0.000	0.530	0.000	0.599	0.024	0.332	0.955	0.000	0.05	0.04
PNV-SO-SU17-SB001(9.0-10.0)	15,358	0.744	0.000	0.800	0.000	0.790	0.000	1.476	0.060	1.431	2.967	0.000	0.00	0.00
PNV-SO-SU17-SB001(10.0-11.0)	15,270	0.344	0.000	0.910	0.000	1.020	0.000	1.161	0.042	1.172	2.375	0.000	0.00	0.00
PNV-SO-SU17-SB001(11.0-12.0)	18,838	0.707	0.000	1.080	0.000	0.890	0.000	0.371	0.005	0.345	0.721	0.000	0.00	0.00
PNV-SO-SU17-SB002(9.0-10.0)	9,988	0.246	0.000	0.612	0.000	0.729	0.000	1.134	0.037	1.059	2.230	0.000	0.00	0.00
PNV-SO-SU17-SB002(10.0-11.0)	19,181	0.869	0.000	0.487	0.000	0.808	0.000	1.041	0.067	0.837	1.945	0.000	0.00	0.00
PNV-SO-SU17-SB002(11.0-12.0)	20,895	1.591	0.171	0.452	0.000	0.536	0.000	0.714	0.031	0.841	1.586	0.000	0.02	0.01
PNV-SO-SU17-SB003(7.0-8.0)	19,627	0.750	0.000	0.490	0.000	0.726	0.000	1.064	0.011	1.158	2.233	0.000	0.00	0.00
PNV-SO-SU17-SB003(8.0-9.0)	19,371	-0.088	0.000	0.648	0.000	0.716	0.000	1.029	0.036	0.979	2.044	0.000	0.00	0.00
PNV-SO-SU17-SB003(9.0-10.0)	15,745	0.228	0.000	0.819	0.000	0.902	0.000	0.924	0.005	1.074	2.003	0.000	0.00	0.00
PNV-SO-SU17-SB004(7.0-8.0)	19,954	1.849	0.429	0.429	0.000	0.736	0.000	1.138	0.034	0.876	2.048	0.000	0.05	0.04
PNV-SO-SU17-SB004(8.0-9.0)	20,712	0.517	0.000	0.447	0.000	0.725	0.000	1.379	0.066	1.612	3.057	0.000	0.00	0.00
PNV-SO-SU17-SB004(9.0-10.0)	20,161	0.490	0.000	0.617	0.000	0.795	0.000	1.533	0.067	1.291	2.891	0.000	0.00	0.00
PNV-SO-SU17-SB005(4.0-5.0)	16,767	0.390	0.000	0.183	0.000	0.212	0.000	1.396	0.078	1.358	2.832	0.000	0.00	0.00
PNV-SO-SU17-SB005(5.0-6.0)	18,824	0.512	0.000	0.803	0.000	0.725	0.000	0.937	0.041	1.112	2.090	0.000	0.00	0.00
PNV-SO-SU17-SB005(6.0-7.0)	18,606	0.796	0.000	0.589	0.000	0.702	0.000	0.951	0.047	1.025	2.023	0.000	0.00	0.00

Soil Boring Gross Gamma and Analytical Data

Sample I.D.	Gross Gamma Count Rate (cpm)	Ra-226 (pCi/g)	Ra-226 > BKGD (BKGD Value 1.42 pCi/g)	Th-230 (pCi/g)	Th-230 > BKGD (BKGD Value 2.56 pCi/g)	Th-232 (pCi/g)	Th-232 > BDGD (BKGD Value 1.53 pCi/g)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	Total Uranium (pCi/g)	Total Uranium > BKGD (BKGD Value 5.97 pCi/g)	SOR ($DCGL_w$)	SOR ($DCGL_{emc}$)
PNV-SO-SU22-SB001(3.0-4.0)	21,346	0.696	0.000	0.604	0.000	1.086	0.000	0.831	0.031	0.946	1.808	0.000	0.00	0.00
PNV-SO-SU22-SB001(4.0-5.0)	21,215	2.235	0.815	0.541	0.000	0.803	0.000	1.587	0.067	1.484	3.138	0.000	0.09	0.07
PNV-SO-SU22-SB001(5.0-6.0)	19,558	0.295	0.000	0.515	0.000	0.693	0.000	0.905	0.045	0.998	1.948	0.000	0.00	0.00
PNV-SO-SU22-SB002(4.0-5.0)	18,371	0.925	0.000	0.678	0.000	0.758	0.000	0.381	0.021	0.299	0.701	0.000	0.00	0.00
PNV-SO-SU22-SB002(5.0-6.0)	19,494	0.386	0.000	0.494	0.000	0.736	0.000	0.995	0.017	0.948	1.960	0.000	0.00	0.00
PNV-SO-SU22-SB002(6.0-7.0)	18,805	0.624	0.000	0.501	0.000	0.595	0.000	1.091	0.051	1.332	2.474	0.000	0.00	0.00
PNV-SO-SU22-SB003(3.0-4.0)	19,949	2.103	0.683	1.318	0.000	0.786	0.000	1.313	0.019	1.259	2.591	0.000	0.08	0.06
PNV-SO-SU22-SB003(4.0-5.0)	19,809	1.259	0.000	0.563	0.000	0.814	0.000	1.259	0.055	1.222	2.536	0.000	0.00	0.00
PNV-SO-SU22-SB003(5.0-6.0)	18,512	0.704	0.000	0.926	0.000	0.752	0.000	0.590	0.053	0.634	1.277	0.000	0.00	0.00
PNV-SO-SU22-SB004(4.0-5.0)	21,303	0.610	0.000	0.702	0.000	0.717	0.000	1.407	0.049	1.289	2.745	0.000	0.00	0.00
PNV-SO-SU22-SB004(5.0-6.0)	22,026	1.209	0.000	0.497	0.000	0.770	0.000	1.109	0.054	0.834	1.997	0.000	0.00	0.00
PNV-SO-SU22-SB004(6.0-7.0)	21,213	0.213	0.000	0.659	0.000	0.734	0.000	1.117	0.087	1.249	2.453	0.000	0.00	0.00
PNV-SO-SU22-SB005(3.0-4.0)	20,909	0.501	0.000	0.409	0.000	0.622	0.000	0.791	0.015	0.937	1.743	0.000	0.00	0.00
PNV-SO-SU22-SB005(4.0-5.0)	21,036	0.374	0.000	0.702	0.000	0.638	0.000	0.913	0.056	1.254	2.223	0.000	0.00	0.00
PNV-SO-SU22-SB005(5.0-6.0)	20,704	1.350	0.000	0.405	0.000	0.319	0.000	0.895	0.071	1.059	2.025	0.000	0.00	0.00
PNV-SO-SU22-SB006(7.0-8.0)	19,820	0.794	0.000	1.113	0.000	1.090	0.000	0.498	0.016	0.350	0.864	0.000	0.00	0.00
PNV-SO-SU22-SB006(8.0-9.0)	19,754	0.612	0.000	0.880	0.000	0.470	0.000	0.934	0.077	1.020	2.031	0.000	0.00	0.00
PNV-SO-SU22-SB006(9.0-10.0)	20,472	0.448	0.000	0.616	0.000	0.650	0.000	1.158	0.054	1.351	2.563	0.000	0.00	0.00
PNV-SO-SU22-SB007(7.0-8.0)	19,093	0.344	0.000	6.320	3.760	6.307	4.777	0.435	0.014	0.438	0.887	0.000	0.95	0.71
PNV-SO-SU22-SB007(8.0-9.0)	20,183	0.751	0.000	10.215	7.655	3.546	2.016	0.487	0.004	0.445	0.936	0.000	0.64	0.48
PNV-SO-SU22-SB007(9.0-10.0)	20,049	0.466	0.000	4.662	2.102	3.619	2.089	0.493	0.030	0.518	1.041	0.000	0.43	0.32
PNV-SO-SU23-SB001(2.0-3.0)	15,723	1.787	0.367	1.140	0.000	0.700	0.000	0.241	0.068	0.219	0.528	0.000	0.04	0.03
PNV-SO-SU23-SB001(3.0-4.0)	18,803	4.073	2.653	2.060	0.000	1.120	0.000	1.530	0.032	1.467	3.029	0.000	0.29	0.22
PNV-SO-SU23-SB001(4.0-5.0)	22,859	0.586	0.000	1.170	0.000	0.950	0.000	2.418	0.075	1.758	4.251	0.000	0.00	0.00
PNV-SO-SU23-SB002(0.5-1.5)	14,710	0.904	0.000	1.050	0.000	0.890	0.000	0.659	0.060	0.599	1.318	0.000	0.00	0.00
PNV-SO-SU23-SB002(1.5-2.5)	23,702	6.102	4.682	3.470	0.910	0.990	0.000	5.251	0.290	4.775	10.316	4.346	0.57	0.42
PNV-SO-SU23-SB002(2.5-3.5)	19,052	0.892	0.000	1.170	0.000	0.720	0.000	2.085	0.157	2.366	4.608	0.000	0.00	0.00
PNV-SO-SU23-SB003(2.0-3.0)	13,065	0.425	0.000	1.570	0.000	1.330	0.000	0.364	0.000	0.312	0.676	0.000	0.00	0.00
PNV-SO-SU23-SB003(3.0-4.0)	19,760	0.019	0.000	1.040	0.000	0.860	0.000	0.530	0.031	0.644	1.205	0.000	0.00	0.00
PNV-SO-SU23-SB003(4.0-5.0)	19,844	0.985	0.000	1.020	0.000	1.030	0.000	0.809	0.000	0.411	1.220	0.000	0.00	0.00
PNV-SO-SU23-SB004(6.0-7.0)	16,425	0.483	0.000	0.414	0.000	0.128	0.000	1.075	0.037	1.288	2.400	0.000	0.00	0.00
PNV-SO-SU23-SB004(7.0-8.0)	20,148	0.245	0.000	0.998	0.000	0.769	0.000	1.411	0.037	1.394	2.842	0.000	0.00	0.00
PNV-SO-SU23-SB004(8.0-9.0)	21,482	0.835	0.000	1.256	0.000	0.890	0.000	1.153	0.035	1.110	2.298	0.000	0.00	0.00
PNV-SO-SU23-SB005(5.0-6.0)	19,412	0.416	0.000	0.668	0.000	0.947	0.000	1.811	0.127	1.650	3.588	0.000	0.00	0.00
PNV-SO-SU23-SB005(6.0-7.0)	19,400	-0.219	0.000	0.284	0.000	0.496	0.000	0.482	-0.018	0.413	0.877	0.000	0.00	0.00
PNV-SO-SU23-SB005(7.0-8.0)	18,808	0.050	0.000	0.875	0.000	0.293	0.000	1.560	0.081	1.373	3.014	0.000	0.00	0.00
PNV-SO-SU23-SB006(9.0-10.0)	13,487	0.714	0.000	0.448	0.000	0.508	0.000	1.219	0.073	1.474	2.766	0.000	0.00	0.00
PNV-SO-SU23-SB006(10.0-11.0)	16,384	0.836	0.000	0.662	0.000	0.557	0.000	0.922	0.010	1.244	2.176	0.000	0.00	0.00
PNV-SO-SU23-SB006(11.0-12.0)	19,365	1.522	0.102	0.423	0.000	1.065	0.000	0.975	0.010	0.924	1.909	0.000	0.01	0.01
PNV-SO-SU25-SB001(5.0-6.0)	20,404	0.657	0.000	1.070	0.000	1.000	0.000	0.847	0.091	0.919	1.857	0.000	0.00	0.00
PNV-SO-SU25-SB001(6.0-7.0)	20,789	0.685	0.000	1.270	0.000	1.170	0.000	0.562	0.067	0.507	1.136	0.000	0.00	0.00
PNV-SO-SU25-SB001(7.0-8.0)	21,426	0.230	0.000	1.100	0.000	1.120	0.000	0.507	0.008	0.491	1.006	0.000	0.00	0.00

Soil Boring Gross Gamma and Analytical Data

Sample I.D.	Gross Gamma Count Rate (cpm)	Ra-226 (pCi/g)	Ra-226 > BKGD (BKGD Value 1.42 pCi/g)	Th-230 (pCi/g)	Th-230 > BKGD (BKGD Value 2.56 pCi/g)	Th-232 (pCi/g)	Th-232 > BDGD (BKGD Value 1.53 pCi/g)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	Total Uranium (pCi/g)	Total Uranium > BKGD (BKGD Value 5.97 pCi/g)	SOR ($DCGL_w$)	SOR ($DCGL_{emc}$)
PNV-SO-SU25-SB002(6.0-7.0)	20,457	0.350	0.000	1.320	0.000	1.510	0.000	0.720	0.049	0.830	1.599	0.000	0.00	0.00
PNV-SO-SU25-SB002(7.0-8.0)	20,865	0.627	0.000	1.220	0.000	1.030	0.000	1.105	0.023	1.094	2.222	0.000	0.00	0.00
PNV-SO-SU25-SB002(8.0-9.0)	20,757	0.262	0.000	0.600	0.000	0.590	0.000	0.723	0.032	1.169	1.924	0.000	0.00	0.00
PNV-SO-SU26-SB001(3.0-4.0)	21,098	1.404	0.000	0.570	0.000	0.230	0.000	0.583	0.018	0.566	1.167	0.000	0.00	0.00
PNV-SO-SU26-SB001(4.0-5.0)	21,522	1.281	0.000	0.660	0.000	0.620	0.000	0.558	0.011	0.438	1.007	0.000	0.00	0.00
PNV-SO-SU26-SB001(5.0-6.0)	21,148	0.495	0.000	0.700	0.000	0.780	0.000	0.562	0.008	0.557	1.127	0.000	0.00	0.00
PNV-SO-SU26-SB002(7.0-8.0)	19,944	0.207	0.000	1.210	0.000	0.710	0.000	0.520	0.032	0.467	1.019	0.000	0.00	0.00
PNV-SO-SU26-SB002(8.0-9.0)	20,446	0.908	0.000	1.130	0.000	0.850	0.000	0.402	0.016	0.308	0.726	0.000	0.00	0.00
PNV-SO-SU26-SB002(9.0-10.0)	20,624	0.403	0.000	0.760	0.000	0.940	0.000	0.269	-0.011	0.265	0.523	0.000	0.00	0.00
PNV-SO-SU26-SB003(7.0-8.0)	19,620	1.416	0.000	1.010	0.000	0.960	0.000	1.168	-0.004	1.122	2.286	0.000	0.00	0.00
PNV-SO-SU26-SB003(8.0-9.0)	20,030	2.474	1.054	1.230	0.000	1.120	0.000	1.102	0.047	1.182	2.331	0.000	0.12	0.09
PNV-SO-SU26-SB003(9.0-10.0)	18,531	1.463	0.043	1.240	0.000	1.020	0.000	1.023	0.044	1.194	2.261	0.000	0.00	0.00

Test Pit Gross Gamma and Analytical Data

Sample I.D.	Gross Gamma Count Rate (cpm)	Ra-226 (pCi/g)	Ra-226 > BKGD (BKGD Value 1.42 pCi/g)	Th-230 (pCi/g)	Th-230 > BKGD (BKGD Value 2.56 pCi/g)	Th-232 (pCi/g)	Th-232 > BDGD (BKGD Value 1.53 pCi/g)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	Total Uranium (pCi/g)	Total Uranium > BKGD (BKGD Value 5.97 pCi/g)	SOR ($DCGL_w$)	SOR ($DCGL_{emc}$)
PNV-SO-SU14-TP001-S	5,224	0.137	0.000	0.540	0.000	0.580	0.000	0.444	0.029	0.596	1.069	0.000	0.0000	0.0000
PNV-SO-SU14-TP001-BT	11,392	0.534	0.000	0.659	0.000	0.454	0.000	1.024	0.071	1.075	2.170	0.000	0.0000	0.0000
PNV-SO-SU14-TP001-NW(3.0-3.5)	11,636	0.631	0.000	0.541	0.000	0.610	0.000	0.328	0.013	0.327	0.668	0.000	0.0000	0.0000
PNV-SO-SU14-TP001-SW(5.0)	15,182	0.446	0.000	0.911	0.000	1.090	0.000	1.263	0.081	1.150	2.494	0.000	0.0000	0.0000
PNV-SO-SU14-TP001-EW(3.5-4.0)	10,807	0.286	0.000	0.529	0.000	0.722	0.000	0.588	0.043	0.306	0.937	0.000	0.0000	0.0000
PNV-SO-SU14-TP002-S	14,789	0.908	0.000	0.680	0.000	0.254	0.000	0.863	0.023	0.718	1.604	0.000	0.0000	0.0000
PNV-SO-SU14-TP002-BT	9,283	0.423	0.000	3.102	0.542	0.580	0.000	1.030	0.051	1.057	2.138	0.000	0.0217	0.0159
PNV-SO-SU14-TP002-NW(6.0)	11,902	0.490	0.000	1.006	0.000	0.978	0.000	1.070	0.035	1.187	2.292	0.000	0.0000	0.0000
PNV-SO-SU14-TP002-WW(1.5-2.0)	11,300	0.778	0.000	0.519	0.000	0.212	0.000	1.389	0.128	1.799	3.316	0.000	0.0000	0.0000
PNV-SO-SU14-TP003-S	2,596	1.021	0.000	0.690	0.000	0.370	0.000	0.247	0.024	0.177	0.448	0.000	0.0000	0.0000
PNV-SO-SU14-TP003-BT	10,004	0.667	0.000	1.240	0.000	1.270	0.000	0.946	0.014	1.168	2.128	0.000	0.0000	0.0000
PNV-SO-SU14-TP003-SW(5.0-5.5)	10,011	0.309	0.000	1.180	0.000	1.370	0.000	0.671	0.048	0.907	1.626	0.000	0.0000	0.0000
PNV-SO-SU14-TP003-WW(4.0-4.5)	12,710	0.508	0.000	0.950	0.000	0.810	0.000	0.771	0.119	0.359	1.249	0.000	0.0000	0.0000
PNV-SO-SU15-TP001-S	4,215	0.528	0.000	0.740	0.000	0.380	0.000	0.833	0.022	0.889	1.744	0.000	0.0000	0.0000
PNV-SO-SU15-TP001-BT	8,799	0.676	0.000	0.960	0.000	0.810	0.000	0.483	0.164	0.740	1.387	0.000	0.0000	0.0000
PNV-SO-SU15-TP001-EW(2.0-3.0)	9,050	1.029	0.000	1.490	0.000	1.110	0.000	1.079	-0.011	1.170	2.238	0.000	0.0000	0.0000
PNV-SO-SU15-TP001-WW(2.5)	9,355	0.792	0.000	0.670	0.000	0.600	0.000	0.316	0.031	0.433	0.780	0.000	0.0000	0.0000
PNV-SO-SU15-TP002-S	2,382	-0.119	0.000	0.500	0.000	0.580	0.000	0.516	0.000	0.599	1.115	0.000	0.0000	0.0000
PNV-SO-SU15-TP002-BT	9,262	0.416	0.000	0.900	0.000	1.060	0.000	1.834	0.037	2.387	4.258	0.000	0.0000	0.0000
PNV-SO-SU15-TP002-NW(1.5-2.0)	10,204	1.161	0.000	1.560	0.000	1.200	0.000	1.734	0.094	2.050	3.878	0.000	0.0000	0.0000
PNV-SO-SU15-TP002-SW(3.5-4.0)	9,864	0.727	0.000	1.010	0.000	0.300	0.000	1.457	0.064	1.234	2.755	0.000	0.0000	0.0000
PNV-SO-SU15-TP003-S	5,206	1.786	0.366	1.200	0.000	0.230	0.000	0.925	0.052	0.938	1.915	0.000	0.0407	0.0305
PNV-SO-SU15-TP003-BT	8,997	0.925	0.000	1.210	0.000	1.110	0.000	1.341	0.064	1.715	3.120	0.000	0.0000	0.0000
PNV-SO-SU15-TP003-NW(6.0)	10,592	0.660	0.000	0.880	0.000	0.840	0.000	1.270	0.027	1.478	2.775	0.000	0.0000	0.0000
PNV-SO-SU15-TP003-SW(6.0)	10,679	0.673	0.000	0.930	0.000	0.980	0.000	1.459	0.040	1.113	2.612	0.000	0.0000	0.0000
PNV-SO-SU16-TP001-S	4,381	1.115	0.000	1.010	0.000	0.490	0.000	2.346	0.067	2.657	5.070	0.000	0.0000	0.0000
PNV-SO-SU16-TP001-BT	10,207	0.814	0.000	1.040	0.000	0.920	0.000	2.313	0.107	2.401	4.821	0.000	0.0000	0.0000
PNV-SO-SU16-TP001-NW(5.5)	10,724	0.011	0.000	1.110	0.000	1.120	0.000	1.568	0.000	1.806	3.374	0.000	0.0000	0.0000
PNV-SO-SU16-TP001-WW(5.0)	10,545	0.676	0.000	1.220	0.000	1.280	0.000	2.664	0.131	2.486	5.281	0.000	0.0000	0.0000
PNV-SO-SU16-TP002-S	12,789	0.275	0.000	0.468	0.000	0.202	0.000	0.847	0.068	0.913	1.828	0.000	0.0000	0.0000
PNV-SO-SU16-TP002-BT	8,649	0.577	0.000	1.461	0.000	0.880	0.000	0.900	0.004	1.234	2.138	0.000	0.0000	0.0000
PNV-SO-SU16-TP002-NW(5.5-6.0)	9,245	0.713	0.000	1.267	0.000	0.824	0.000	0.871	0.045	0.793	1.709	0.000	0.0000	0.0000
PNV-SO-SU16-TP002-WW(6.0)	8,868	0.099	0.000	0.940	0.000	0.550	0.000	0.287	0.017	0.301	0.605	0.000	0.0000	0.0000
PNV-SO-SU18-TP001-S	5,489	1.392	0.000	0.640	0.000	0.610	0.000	0.231	0.014	0.206	0.451	0.000	0.0000	0.0000
PNV-SO-SU18-TP001-BT	10,165	0.472	0.000	0.730	0.000	0.790	0.000	0.522	0.016	0.393	0.931	0.000	0.0000	0.0000
PNV-SO-SU18-TP001-NW(5.5)	10,843	0.456	0.000	1.000	0.000	0.630	0.000	0.531	0.047	0.530	1.108	0.000	0.0000	0.0000
PNV-SO-SU18-TP001-SW(5.0)	11,794	1.485	0.065	0.990	0.000	0.740	0.000	0.581	0.047	0.441	1.069	0.000	0.0072	0.0054
PNV-SO-SU18-TP002-BT	9,246	2.465	0.000	1.160	0.000	0.860	0.000	0.700	0.092	0.324	1.116	0.000	0.0000	0.0000
PNV-SO-SU18-TP002-EW(5.5)	10,954	0.471	0.000	1.040	0.000	1.180	0.000	1.098	0.075	1.036	2.209	0.000	0.0000	0.0000
PNV-SO-SU18-TP002-WW(6.0)	10,502	0.457	0.000	1.170	0.000	1.000	0.000	1.091	0.072	1.122	2.285	0.000	0.0000	0.0000
PNV-SO-SU19-TP001-S	6,623	0.082	0.000	0.430	0.000	0.540	0.000	0.359	0.013	0.377	0.749	0.000	0.0000	0.0000
PNV-SO-SU19-TP001-BT	9,607	0.311	0.000	0.760	0.000	0.620	0.000	0.535	0.022	0.329	0.886	0.000	0.0000	0.0000
PNV-SO-SU19-TP001-EW(5.5-6.0)	13,633	0.951	0.000	0.700	0.000	0.820	0.000	0.317	0.000	0.380	0.697	0.000	0.0000	0.0000

Test Pit Gross Gamma and Analytical Data

Sample I.D.	Gross Gamma Count Rate (cpm)	Ra-226 (pCi/g)	Ra-226 > BKGD (BKGD Value 1.42 pCi/g)	Th-230 (pCi/g)	Th-230 > BKGD (BKGD Value 2.56 pCi/g)	Th-232 (pCi/g)	Th-232 > BDGD (BKGD Value 1.53 pCi/g)	U-234 (pCi/g)	U-235 (pCi/g)	U-238 (pCi/g)	Total Uranium (pCi/g)	Total Uranium > BKGD (BKGD Value 5.97 pCi/g)	SOR ($DCGL_w$)	SOR ($DCGL_{emc}$)
PNV-SO-SU19-TP001-WW(5.0)	7,643	0.196	0.000	1.000	0.000	0.870	0.000	0.263	-0.006	0.396	0.653	0.000	0.0000	0.0000
PNV-SO-SU19-TP002-S	2,404	0.879	0.000	0.000	0.000	0.251	0.000	0.290	-0.015	0.247	0.522	0.000	0.0000	0.0000
PNV-SO-SU19-TP002-BT	8,653	0.285	0.000	0.797	0.000	0.622	0.000	0.395	0.014	0.356	0.765	0.000	0.0000	0.0000
PNV-SO-SU19-TP002-NW(4.5-5.0)	9,296	0.642	0.000	0.681	0.000	0.431	0.000	0.444	0.015	0.627	1.086	0.000	0.0000	0.0000
PNV-SO-SU19-TP002-WW(5.0-5.5)	9,291	0.656	0.000	0.833	0.000	0.731	0.000	0.595	0.012	0.354	0.961	0.000	0.0000	0.0000
PNV-SO-SU19-TP003-S	2,496	0.489	0.000	0.600	0.000	0.380	0.000	1.287	0.063	1.393	2.743	0.000	0.0000	0.0000
PNV-SO-SU19-TP003-BT	9,756	0.187	0.000	0.800	0.000	1.220	0.000	1.772	0.040	1.661	3.473	0.000	0.0000	0.0000
PNV-SO-SU19-TP003-NW(5.0)	11,384	0.543	0.000	1.150	0.000	1.040	0.000	1.812	0.061	1.984	3.857	0.000	0.0000	0.0000
PNV-SO-SU19-TP003-WW(4.5)	11,588	1.141	0.000	1.200	0.000	1.000	0.000	1.846	0.122	1.688	3.656	0.000	0.0000	0.0000
PNV-SO-SU19-TP004-S (Stairway)	26,560	1.387	0.000	1.300	0.000	0.420	0.000	0.656	0.083	0.470	1.209	0.000	0.0000	0.0000
PNV-SO-SU20-TP001-S (0.0-0.5)	12,022	2.000	0.580	1.260	0.000	0.790	0.000	0.226	0.008	0.196	0.430	0.000	0.0644	0.0483
PNV-SO-SU20-TP001-BT	9,352	0.354	0.000	1.170	0.000	0.980	0.000	1.586	0.048	1.278	2.912	0.000	0.0000	0.0000
PNV-SO-SU20-TP001-NW(5.0)	9,696	0.165	0.000	0.860	0.000	0.930	0.000	0.732	0.040	0.471	1.243	0.000	0.0000	0.0000
PNV-SO-SU20-TP001-WW(5.0)	10,099	1.048	0.000	0.950	0.000	0.800	0.000	0.984	0.019	0.691	1.694	0.000	0.0000	0.0000
PNV-SO-SU20-TP002-S (0.0-0.5)	3,000	0.733	0.000	0.920	0.000	0.450	0.000	1.448	0.034	1.470	2.952	0.000	0.0000	0.0000
PNV-SO-SU20-TP002-BT	12,874	0.860	0.000	1.110	0.000	1.030	0.000	1.733	0.087	1.590	3.410	0.000	0.0000	0.0000
PNV-SO-SU20-TP002-NW(5.5-6.0)	12,228	0.381	0.000	0.930	0.000	0.690	0.000	1.833	0.101	1.921	3.855	0.000	0.0000	0.0000
PNV-SO-SU20-TP002-WW(3.5-4.0)	11,310	0.471	0.000	1.080	0.000	0.860	0.000	1.546	0.032	1.738	3.316	0.000	0.0000	0.0000
PNV-SO-SU21-TP001-S	2,081	0.957	0.000	0.480	0.000	0.032	0.000	0.450	0.000	0.529	0.979	0.000	0.0000	0.0000
PNV-SO-SU21-TP001-BT	9,541	1.659	0.000	0.752	0.000	0.895	0.000	1.394	0.100	1.692	3.186	0.000	0.0000	0.0000
PNV-SO-SU21-TP001-SW(3.0-4.0)	10,088	0.369	0.000	0.478	0.000	0.607	0.000	0.525	0.023	0.220	0.768	0.000	0.0000	0.0000
PNV-SO-SU21-TP001-WW(3.0-4.0)	10,507	0.529	0.000	0.588	0.000	0.587	0.000	1.193	0.092	1.148	2.433	0.000	0.0000	0.0000

Core Analytical Reports

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01552	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU1SB001(6.0-7.0)52009	**ARS Sample ID:**	ARS1-09-01552-001
Sample Collection Date:	05/20/09	**Date Received:**	05/26/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.394	0.270	0.385	0.179		pCi/g	AGS-A-002			
U-234	0.376	0.139	0.074	0.022		pCi/g	ASP-A-025	6/4/2009	JB	74%
U-235	0.048	0.053	0.065	0.014		pCi/g	ASP-A-025	6/4/2009	JB	74%
U-238	0.307	0.135	0.127	0.048		pCi/g	ASP-A-025	6/4/2009	JB	74%

NOTES:

C. Bulej

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-001

Radiochemistry

Lab Sample ID: F9F010115-010
Work Order: LD4JM
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 77
Thorium 228	1.00		0.23	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.07		0.24	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.97	J	0.23	1.00	0.03	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01552	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU1SB001(7.0-8.0)52009	**ARS Sample ID:**	ARS1-09-01552-002
Sample Collection Date:	05/20/09	**Date Received:**	05/26/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.132	0.194	0.323	0.148		pCi/g	AGS-A-002			
U-234	0.493	0.168	0.088	0.027		pCi/g	ASP-A-025	6/4/2009	JB	70%
U-235	0.029	0.040	0.039	0.000		pCi/g	ASP-A-025	6/4/2009	JB	70%
U-238	0.351	0.141	0.094	0.030		pCi/g	ASP-A-025	6/4/2009	JB	70%

NOTES:

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-002

Radiochemistry

Lab Sample ID: F9F010115-011
Work Order: LD4JN
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152391		Yld % 83
Thorium 228	0.98	J	0.23	1.00	0.09	06/01/09	06/04/09
Thorium 230	0.90	J	0.22	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.79	J	0.20	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277. FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552

Client Sample ID: PNV-SO-SU1SB001(7.0-8.0)52009(Duplicate)

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01552-003

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.792	0.327	0.306	0.140		pCi/g	AGS-A-002			
U-234	0.266	0.146	0.132	0.043		pCi/g	ASP-A-025	6/4/2009	JB	45%
U-235	0.033	0.057	0.099	0.022		pCi/g	ASP-A-025	6/4/2009	JB	45%
U-238	0.283	0.145	0.101	0.027		pCi/g	ASP-A-025	6/4/2009	JB	45%

NOTES:

C. Bulejg

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-003

Radiochemistry

Lab Sample ID: F9F010115-012
Work Order: LD4JP
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 77
Thorium 228	1.12		0.25	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.08		0.25	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.99	J	0.23	1.00	0.05	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO-SU1SB001(8.0-9.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01552-004
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.426	0.208	0.223	0.099		pCi/g	AGS-A-002			
U-234	0.355	0.144	0.085	0.025		pCi/g	ASP-A-025	6/4/2009	JB	64%
U-235	-0.010	0.014	0.088	0.024		pCi/g	ASP-A-025	6/4/2009	JB	64%
U-238	0.192	0.107	0.093	0.029		pCi/g	ASP-A-025	6/4/2009	JB	64%

NOTES:

C. Bulgy
Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-004

Radiochemistry

Lab Sample ID: F9F010115-013
Work Order: LD4JQ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 71
Thorium 228	1.35		0.29	1.00	0.11	06/01/09	06/04/09
Thorium 230	1.44		0.30	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.19		0.27	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01553	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU1SB002(6.0-7.0)52009	**ARS Sample ID:**	ARS1-09-01553-004
Sample Collection Date:	05/20/09	**Date Received:**	05/26/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.903	0.331	0.217	0.097		pCi/g	AGS-A-002			
U-234	0.244	0.148	0.162	0.057		pCi/g	ASP-A-025	6/4/2009	JB	50%
U-235	-0.013	0.019	0.117	0.031		pCi/g	ASP-A-025	6/4/2009	JB	50%
U-238	0.324	0.154	0.085	0.019		pCi/g	ASP-A-025	6/4/2009	JB	50%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-004

Radiochemistry

Lab Sample ID: F9F010116-004
Work Order: LD4KA
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 63
Thorium 228	1.24		0.29	1.00	0.07	06/01/09	06/04/09
Thorium 230	1.24		0.29	1.00	0.10	06/01/09	06/04/09
Thorium 232	0.97	J	0.25	1.00	0.04	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

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ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU1SB002(7.0-8.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-005
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.752	0.292	0.211	0.093		pCi/g	AGS-A-002			
U-234	0.203	0.108	0.094	0.030		pCi/g	ASP-A-025	6/4/2009	JB	63%
U-235	0.014	0.028	0.039	0.000		pCi/g	ASP-A-025	6/4/2009	JB	63%
U-238	0.338	0.135	0.072	0.019		pCi/g	ASP-A-025	6/4/2009	JB	63%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-005

Radiochemistry

Lab Sample ID: F9F010116-005
Work Order: LD4KC
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 64
Thorium 228	0.96	J	0.25	1.00	0.12	06/01/09	06/04/09
Thorium 230	1.22		0.29	1.00	0.09	06/01/09	06/04/09
Thorium 232	1.19		0.28	1.00	0.08	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553

Client Sample ID: PNV-SO-SU1SB002(8.0-9.0)52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01553-006

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.485	0.210	0.169	0.071		pCi/g	AGS-A-002			
U-234	0.354	0.157	0.111	0.034		pCi/g	ASP-A-025	6/4/2009	JB	52%
U-235	0.012	0.037	0.089	0.020		pCi/g	ASP-A-025	6/4/2009	JB	52%
U-238	0.410	0.170	0.119	0.038		pCi/g	ASP-A-025	6/4/2009	JB	52%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-006

Radiochemistry

Lab Sample ID: F9F010116-006
Work Order: LD4KD
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 75
Thorium 228	1.13		0.27	1.00	0.14	06/01/09	06/04/09
Thorium 230	1.04		0.25	1.00	0.11	06/01/09	06/04/09
Thorium 232	0.77	J	0.21	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552

Client Sample ID: PNV-SO-SU2SB001(9.0-10.0)52109

Sample Collection Date: 05/21/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01552-005

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.316	0.190	0.236	0.104		pCi/g	AGS-A-002			
U-234	0.487	0.201	0.122	0.036		pCi/g	ASP-A-025	6/4/2009	JB	43%
U-235	0.014	0.045	0.106	0.024		pCi/g	ASP-A-025	6/4/2009	JB	43%
U-238	0.368	0.180	0.159	0.054		pCi/g	ASP-A-025	6/4/2009	JB	43%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-005

Radiochemistry

Lab Sample ID: F9F010115-014
Work Order: LD4JR
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 84
Thorium 228	1.17		0.25	1.00	0.1	06/01/09	06/04/09
Thorium 230	1.12		0.24	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.84	J	0.20	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO2SB001(10.0-11.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01552-006
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.350	0.250	0.359	0.166		pCi/g	AGS-A-002			
U-234	0.426	0.231	0.185	0.054		pCi/g	ASP-A-025	6/4/2009	JB	32%
U-235	0.000	0.064	0.089	0.000		pCi/g	ASP-A-025	6/4/2009	JB	32%
U-238	0.500	0.260	0.241	0.082		pCi/g	ASP-A-025	6/4/2009	JB	32%

NOTES:

C. Bailey
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-006

Radiochemistry

Lab Sample ID: F9F010115-015
Work Order: LD4JT
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 59
Thorium 228	1.26		0.30	1.00	0.09	06/01/09	06/04/09
Thorium 230	0.80	J	0.24	1.00	0.09	06/01/09	06/04/09
Thorium 232	0.94	J	0.26	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO-SU2SB001(11.0-12.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01552-007
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.149	0.412	0.171	0.068		pCi/g	ARS-009/ EPA 903.1	6/3/09 17:02	BJS	75%
U-234	0.572	0.198	0.089	0.024		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	52%
U-235	0.000	0.035	0.048	0.000		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	52%
U-238	0.444	0.177	0.124	0.041		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	52%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-007

Radiochemistry

Lab Sample ID: F9F010115-016
Work Order: LD4JV
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 76
Thorium 228	1.30		0.27	1.00	0.06	06/01/09	06/04/09
Thorium 230	1.27		0.27	1.00	0.09	06/01/09	06/04/09
Thorium 232	1.22		0.26	1.00	0.03	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552

Client Sample ID: PNV-SO-SU2SB001(11.0-12.0)52109(Duplicate)

Sample Collection Date: 05/21/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01552-008

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.115	0.191	0.322	0.148		pCi/g	AGS-A-002			
U-234	0.649	0.202	0.080	0.021		pCi/g	ASP-A-025	6/4/2009	JB	60%
U-235	0.011	0.033	0.078	0.017		pCi/g	ASP-A-025	6/4/2009	JB	60%
U-238	0.379	0.149	0.067	0.015		pCi/g	ASP-A-025	6/4/2009	JB	60%

NOTES:

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-008

Radiochemistry

Lab Sample ID: F9F010115-017
Work Order: LD4JW
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 86
Thorium 228	0.84	J	0.20	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.02		0.23	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.03		0.23	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01553	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU2SB002(9.0-10.0)52109	**ARS Sample ID:**	ARS1-09-01553-001
Sample Collection Date:	05/21/09	**Date Received:**	05/26/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.357	0.221	0.296	0.136		pCi/g	AGS-A-002			
U-234	0.428	0.180	0.111	0.033		pCi/g	ASP-A-025	6/4/2009	JB	47%
U-235	0.000	0.039	0.054	0.000		pCi/g	ASP-A-025	6/4/2009	JB	47%
U-238	0.507	0.198	0.121	0.037		pCi/g	ASP-A-025	6/4/2009	JB	47%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-001

Radiochemistry

Lab Sample ID: F9F010116-001
Work Order: LD4J6
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 77
Thorium 228	1.04		0.24	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.12		0.25	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.04		0.24	1.00	0.05	06/01/09	06/04/09

NOTE(S)

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American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-001 DUP

Radiochemistry

Lab Sample ID: F9F010116-001X
Work Order: LD4J6
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152380		Yld % 68
Thorium 228	0.88	J	0.23	1.00	0.11	06/01/09	06/04/09
Thorium 230	1.13		0.26	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.98	J	0.24	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553

Client Sample ID: PNV-SO-SU2SB002(10.0-11.0)52109

Sample Collection Date: 05/21/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01553-002

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.426	0.272	0.375	0.174		pCi/g	AGS-A-002			
U-234	0.586	0.215	0.144	0.049		pCi/g	ASP-A-025	6/4/2009	JB	46%
U-235	0.020	0.038	0.053	0.000		pCi/g	ASP-A-025	6/4/2009	JB	46%
U-238	0.455	0.184	0.110	0.032		pCi/g	ASP-A-025	6/4/2009	JB	46%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-002

Radiochemistry

Lab Sample ID: F9F010116-002
Work Order: LD4J8
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 83
Thorium 228	1.23		0.26	1.00	0.1	06/01/09	06/04/09
Thorium 230	1.35		0.27	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.95	J	0.22	1.00	0.05	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU2SB002(11.0-12.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-003
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.196	0.231	0.374	0.174		pCi/g	AGS-A-002			
U-234	0.424	0.204	0.145	0.042		pCi/g	ASP-A-025	6/4/2009	JB	37%
U-235	0.000	0.051	0.070	0.000		pCi/g	ASP-A-025	6/4/2009	JB	37%
U-238	0.200	0.133	0.060	0.000		pCi/g	ASP-A-025	6/4/2009	JB	37%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-003

Radiochemistry

Lab Sample ID: F9F010116-003
Work Order: LD4J9
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152380		Yld % 76
Thorium 228	1.55		0.31	1.00	0.07	06/01/09	06/04/09
Thorium 230	1.46		0.30	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.20		0.26	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU2SB003(6.0-7.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-009
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.821	0.304	0.167	0.070		pCi/g	AGS-A-002			
U-234	0.423	0.161	0.119	0.042		pCi/g	ASP-A-025	6/4/2009	JB	62%
U-235	0.000	0.029	0.040	0.000		pCi/g	ASP-A-025	6/4/2009	JB	62%
U-238	0.350	0.140	0.074	0.020		pCi/g	ASP-A-025	6/4/2009	JB	62%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-009

Radiochemistry

Lab Sample ID: F9F010116-009
Work Order: LD4KH
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 77
Thorium 228	0.79	J	0.21	1.00	0.10	06/01/09	06/04/09
Thorium 230	0.79	J	0.21	1.00	0.1	06/01/09	06/04/09
Thorium 232	0.82	J	0.21	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU2SB003(7.0-8.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-010
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.161	0.405	0.184	0.078		pCi/g	ARS-009/EPA 903.1	6/4/2009	BJS	
U-234	0.373	0.137	0.032	0.000		pCi/g	ASP-A-025	6/4/2009	JB	62%
U-235	0.024	0.035	0.037	0.000		pCi/g	ASP-A-025	6/4/2009	JB	62%
U-238	0.391	0.140	0.031	0.000		pCi/g	ASP-A-025	6/4/2009	JB	62%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-010

Radiochemistry

Lab Sample ID: F9F010116-010
Work Order: LD4KJ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 77
Thorium 228	1.06		0.25	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.01		0.24	1.00	0.09	06/01/09	06/04/09
Thorium 232	0.95	J	0.23	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU2SB003(8.0-9.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-011
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	-0.244	0.241	0.448	0.210		pCi/g	ARS-009/EPA 903.1	6/4/2009	BJS	
U-234	0.460	0.137	0.067	0.022		pCi/g	ASP-A-025	6/4/2009	JB	81%
U-235	0.020	0.027	0.027	0.000		pCi/g	ASP-A-025	6/4/2009	JB	81%
U-238	0.413	0.133	0.095	0.036		pCi/g	ASP-A-025	6/4/2009	JB	81%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-011

Radiochemistry

Lab Sample ID: F9F010116-011
Work Order: LD4KK
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 77
Thorium 228	0.97	J	0.23	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.84	J	0.21	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.99	J	0.23	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU-13SB001(8.0-9.0) 51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-002
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.530	0.164	0.031	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	61%
U-235	0.000	0.026	0.035	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	61%
U-238	0.337	0.127	0.030	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	61%
RA-226	0.527	0.243	0.274	0.128		pCi/g	ARS-009/EPA 903.1	5/27/09 20:44	BJS	89%
TH-228	0.955	0.236	0.056	0.013		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	76%
TH-230	0.656	0.189	0.090	0.030		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	76%
TH-232	4.791	1.404	0.301	0.030		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	76%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulgy
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU13SB001(9.0-10.0) 51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-001
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.531	0.160	0.075	0.024		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	71%
U-235	0.059	0.052	0.032	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	71%
U-238	0.526	0.156	0.027	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	71%
RA-226	0.396	0.239	0.281	0.131		pCi/g	ARS-009/EPA 903.1	5/27/09 17:08	BJS	89%
TH-228	0.681	0.304	0.201	0.059		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	26%
TH-230	0.423	0.237	0.197	0.057		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	26%
TH-232	1.065	0.384	0.230	0.074		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	26%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

Project Manager Review

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU13SB001(10.0-11.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-003
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.725	0.210	0.114	0.040		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	63%
U-235	0.043	0.049	0.039	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	63%
U-238	0.368	0.158	0.161	0.064		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	63%
RA-226	-0.082	0.189	0.348	0.163	U	pCi/g	ARS-009/EPA 903.1	5/27/09 20:44	BJS	73%
TH-228	0.484	0.384	0.356	0.080		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	11%
TH-230	0.284	0.361	0.573	0.191	U	pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	11%
TH-232	0.496	0.405	0.461	0.134		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	11%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU13-SB002 (6.0-7.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-006
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.870	0.180	0.039	0.011		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	69%
TH-230	0.635	0.145	0.046	0.015		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	69%
TH-232	0.701	0.155	0.046	0.015		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	69%
U-234	1.002	0.182	0.028	0.007		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	78%
U-235	0.029	0.026	0.027	0.006		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	78%
U-238	1.104	0.195	0.013	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	78%
Ra-226	0.627	0.339	0.432	0.201		pCi/g	ARS-009/EPA 903.1	6/8/09 19:28	TRL	

NOTES:

C. Bulgrin
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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU13-SB002 (7.0-8.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-007
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.857	0.182	0.057	0.020		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	70%
TH-230	0.565	0.136	0.017	0.000		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	70%
TH-232	0.750	0.165	0.055	0.019		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	70%
U-234	1.008	0.194	0.041	0.013		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	68%
U-235	0.018	0.023	0.033	0.007		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	68%
U-238	1.164	0.215	0.047	0.016		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	68%
Ra-226	0.309	0.143	0.132	0.057		pCi/g	ARS-009/EPA 903.1	5/25/09 16:17	TRL	100%

NOTES:

C. Bulegin
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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU13-SB002 (8.0-9.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-008
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.928	0.213	0.056	0.016		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	44%
TH-230	0.475	0.142	0.067	0.021		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	44%
TH-232	0.730	0.187	0.109	0.043		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	44%
U-234	0.894	0.177	0.028	0.006		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	63%
U-235	0.026	0.026	0.018	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	63%
U-238	0.887	0.176	0.033	0.009		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	63%
Ra-226	0.523	0.253	0.378	0.175		pCi/g	ARS-009/EPA 903.1	5/25/09 16:30	TRL	67%

NOTES:

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU13SB003(7.0-8.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-010
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.066	0.284	0.137	0.049		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	55%
U-235	0.057	0.069	0.100	0.027		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	55%
U-238	1.058	0.277	0.072	0.016		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	55%
RA-226	0.601	0.222	0.154	0.069		pCi/g	ARS-009/EPA 903.1	5/28/09 2:45	BJS	100%
TH-228	0.760	0.286	0.122	0.027		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	36%
TH-230	0.499	0.232	0.171	0.053		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	36%
TH-232	0.474	0.219	0.118	0.026		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	36%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulegin
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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU13SB003(8.0-9.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-011
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.941	0.260	0.111	0.036		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
U-235	0.068	0.067	0.046	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
U-238	1.158	0.292	0.085	0.023		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
RA-226	0.531	0.213	0.190	0.087		pCi/g	ARS-009/EPA 903.1	5/28/09 2:45	BJS	41%
TH-228	0.497	0.220	0.112	0.025		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	36%
TH-230	0.536	0.230	0.145	0.042		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	36%
TH-232	0.587	0.239	0.130	0.035		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	36%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulegy

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU13SB003(8.0-9.0)51609(DUPLICATE)
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-012
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.673	0.305	0.341	0.160		pCi/g	ARS-009/EPA 903.1	05/28/09 03:12	BJS	75%
U-234	1.185	0.324	0.128	0.040		pCi/g	ARS-026/Eichrom ACW-03-15	05/31/09 10:33	JB	44%
U-235	0.035	0.060	0.103	0.023	U	pCi/g	ARS-026/Eichrom ACW-03-15	05/31/09 10:33	JB	44%
U-238	1.069	0.306	0.137	0.044		pCi/g	ARS-026/Eichrom ACW-03-15	05/31/09 10:33	JB	44%
TH-228	0.479	0.214	0.142	0.041		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	40%
TH-230	0.650	0.254	0.180	0.061		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	40%
TH-232	0.966	0.309	0.150	0.046		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	40%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01556
Client Sample ID: PNV-SO-SU13SB003(9.0 - 10.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01556-001
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.610	0.234	0.177	0.080		pCi/g	ARS-009/EPA 903.1	6/3/09 2:47	JB'	100%
U-234	0.432	0.131	0.023	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	83%
U-235	0.000	0.020	0.027	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	83%
U-238	0.345	0.115	0.023	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	83%

NOTES: AIR BILL NUMBER 1Z7R057F2310000167/SAMPLERS NAME: ERIC SCHMITT

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01556-001

Radiochemistry

Lab Sample ID: F9F010117-005
Work Order: LD4LH
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 84
Thorium 228	0.87	J	0.21	1.00	0.07	06/01/09	06/04/09
Thorium 230	0.97	J	0.23	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.99	J	0.23	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01541	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU13SB004(7.0-8.0)51609	**ARS Sample ID:**	ARS1-09-01541-003
Sample Collection Date:	05/16/09	**Date Received:**	05/22/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.130	0.156	0.254	0.119		pCi/g	ARS-009/EPA 903.1	6/1/09 4:04	BJS	100%
U-234	0.628	0.213	0.093	0.025		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	48%
U-235	0.012	0.038	0.091	0.020		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	48%
U-238	0.569	0.200	0.078	0.017		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	48%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-003

Radiochemistry

Lab Sample ID: F9F010113-016
Work Order: LD4G0
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 63
Thorium 228	0.74	J	0.23	1.00	0.13	06/01/09	06/05/09
Thorium 230	0.61	J	0.21	1.00	0.12	06/01/09	06/05/09
Thorium 232	0.66	J	0.21	1.00	0.08	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01541	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU13SB004(8.0-9.0)51609	**ARS Sample ID:**	ARS1-09-01541-001
Sample Collection Date:	05/16/09	**Date Received:**	05/22/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.686	0.256	0.211	0.098		pCi/g	ARS-009/EPA 903.1	6/1/09 3:32	BJS	100%
U-234	1.488	4.458	9.683	2.826		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	1%
U-235	0.000	3.380	4.673	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	1%
U-238	-1.980	3.887	12.639	4.308		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	1%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Mary S. Foster

Project Manager/Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-001

Radiochemistry

Lab Sample ID: F9F010113-014
Work Order: LD4GW
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 74
Thorium 228	0.55	J	0.18	1.00	0.09	06/01/09	06/05/09
Thorium 230	0.46	J	0.16	1.00	0.1	06/01/09	06/05/09
Thorium 232	0.50	J	0.17	1.00	0.08	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU13SB004(8.0-9.0)51609(DUPLICATE)
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-002
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.297	0.166	0.215	0.100		pCi/g	ARS-009/EPA 903.1	6/1/09 4:04	BJS	59%
U-234	0.443	0.148	0.064	0.017		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	69%
U-235	0.038	0.043	0.034	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	69%
U-238	0.581	0.175	0.089	0.029		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	69%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-002

Radiochemistry

Lab Sample ID: F9F010113-015
Work Order: LD4GX
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 83
Thorium 228	0.38	J	0.14	1.00	0.07	06/01/09	06/05/09
Thorium 230	0.51	J	0.16	1.00	0.07	06/01/09	06/05/09
Thorium 232	0.38	J	0.13	1.00	0.06	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU13SB004(9.0-10.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01541-004
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.912	0.605	0.132	0.053		pCi/g	ARS-009/EPA 903.1	6/1/09 4:39	BJS	63%
U-234	0.599	0.171	0.028	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	70%
U-235	0.024	0.034	0.033	0.000	U	pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	70%
U-238	0.332	0.122	0.028	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	70%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-004

Radiochemistry

Lab Sample ID: F9F010113-017
Work Order: LD4G3
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 94
Thorium 228	0.46	J	0.15	1.00	0.09	06/01/09	06/05/09
Thorium 230	0.56	J	0.16	1.00	0.06	06/01/09	06/05/09
Thorium 232	0.53	J	0.15	1.00	0.06	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01556
Client Sample ID: PNV-SO-SU17SB001(9.0 - 10.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01556-002
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.744	0.269	0.169	0.075		pCi/g	ARS-009/EPA 903.1	6/3/09 2:47	JB	100%
U-234	1.476	0.292	0.073	0.024		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	77%
U-235	0.060	0.050	0.029	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	77%
U-238	1.431	0.286	0.073	0.024		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	77%

NOTES: AIR BILL NUMBER 1Z7R057F2310000167/SAMPLERS NAME: ERIC SCHMITT

C. Bulegin
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01556-002

Radiochemistry

Lab Sample ID: F9F010117-006
Work Order: LD4LJ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 84
Thorium 228	0.81	J	0.21	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.80	J	0.21	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.79	J	0.20	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01556
Client Sample ID: PNV-SO-SU17SB001(10.0 - 11.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01556-003
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.344	0.227	0.320	0.149		pCi/g	ARS-009/EPA 903.1	6/3/09 3:00	BJS	82%
U-234	1.161	0.246	0.025	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	76%
U-235	0.042	0.042	0.029	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	76%
U-238	1.172	0.247	0.025	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 22:13	JB	76%

NOTES: AIR BILL NUMBER 1Z7RO57F2310000167/SAMPLERS NAME: ERIC SCHMITT

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01556-003

Radiochemistry

Lab Sample ID: F9F010117-007
Work Order: LD4LK
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152467		Yld % 71
Thorium 228	1.03		0.25	1.00	0.11	06/01/09	06/04/09
Thorium 230	0.91	J	0.23	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.02		0.25	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01555
Client Sample ID: PNV-SO-SU17SB0001(11.0-12.0)52109
Sample Collection Date: 05/21/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01555-002
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.707	0.301	0.271	0.120		pCi/g	ARS-009-EPA 903.1	6/5/09 16:15	JB	72%
U-234	0.371	0.133	0.081	0.027		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 13:36	JB	75%
U-235	0.005	0.016	0.033	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 13:36	JB	75%
U-238	0.345	0.140	0.137	0.054		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 13:36	JB	75%

NOTES: CONTRACT# W912P4-07-D-0009/Air Bill number 1Z7RO57F2310000167/SAMPLED BY ERIC SCHMITT

C. Bulegin

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01555-002

Radiochemistry

Lab Sample ID: F9F010117-004
Work Order: LD4LG
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 76
Thorium 228	1.12		0.25	1.00	0.10	06/01/09	06/04/09
Thorium 230	1.08		0.24	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.89	J	0.22	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01555

Client Sample ID: PNV-SO-SU17SB0001(11.0-12.0)52109DUPLICATE

Sample Collection Date: 05/21/09

Sample Matrix: Soil/Solid

Request or PO Number: N/A

ARS Sample ID: ARS1-09-01555-001

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.770	0.281	0.172	0.075		pCi/g	ARS-009-EPA 903.1	6/2/09 20:14	JB	72%
U-234	0.327	0.146	0.158	0.064		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 13:36	JB	64%
U-235	0.018	0.030	0.035	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 13:36	JB	64%
U-238	0.418	0.143	0.030	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/4/09 13:36	JB	64%

NOTES: CONTRACT# W912P4-07-D-0009/Air Bill number 1Z7RO57F2310000167/SAMPLED BY ERIC SCHMITT

C. Bulejg

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01555-001

Radiochemistry

Lab Sample ID: F9F010117-003
Work Order: LD4LF
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 74
Thorium 228	1.05		0.25	1.00	0.11	06/01/09	06/04/09
Thorium 230	1.08		0.25	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.97	J	0.24	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB002 (9.0-10.0) - 5-14-09
Sample Collection Date: 05/14/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-003
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.710	0.153	0.036	0.010		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	78%
TH-230	0.612	0.139	0.054	0.019		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	78%
TH-232	0.729	0.154	0.035	0.010		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	78%
U-234	1.134	0.196	0.012	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	79%
U-235	0.037	0.028	0.014	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	79%
U-238	1.059	0.187	0.033	0.010		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	79%
Ra-226	0.246	0.125	0.135	0.059		pCi/g	ARS-009/EPA 903.1	5/25/09 15:21	TRL	100%

NOTES:

C. Bulgig
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB002 (10.0-11.0) - 5-14-09
Sample Collection Date: 05/14/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-002
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.869	0.288	0.092	0.038		pCi/g	ARS-009/EPA 903.1	05/25/09 19:02	BS	100%
TH-228	0.705	0.153	0.016	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 19:25	JB	73%
TH-230	0.487	0.121	0.044	0.014		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 19:25	JB	73%
TH-232	0.808	0.172	0.093	0.038		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 19:25	JB	73%
U-234	1.041	0.212	0.051	0.016		pCi/g	ARS-029/Eichrom ACW-03-13	05/27/09 00:03	JB	49%
U-235	0.067	0.047	0.023	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	05/27/09 00:03	JB	49%
U-238	0.837	0.183	0.042	0.011		pCi/g	ARS-029/Eichrom ACW-03-13	05/27/09 00:03	JB	49%

NOTES:

C. Bouligny

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB002 (11.0-12.0) - 5-14-09
Sample Collection Date: 05/14/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-001
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.589	0.146	0.052	0.017		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	62%
TH-230	0.452	0.125	0.070	0.026		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	62%
TH-232	0.536	0.135	0.041	0.012		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	62%
U-234	0.714	0.143	0.040	0.014		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	78%
U-235	0.031	0.027	0.027	0.006		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	78%
U-238	0.841	0.161	0.050	0.019		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	78%
Ra-226	1.5909	0.5185	0.1112	0.0416		pCi/g	ARS-009/EPA 903.1	6/6/09 16:55	TRL	

NOTES:

C. Budzynski
Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB003 (7.0-8.0)
Sample Collection Date: 05/14/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-005
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.969	0.197	0.057	0.020		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	68%
TH-230	0.490	0.130	0.075	0.029		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	68%
TH-232	0.726	0.162	0.061	0.022		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	68%
U-234	1.064	0.203	0.046	0.015		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	59%
U-235	0.011	0.019	0.034	0.008	U	pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	59%
U-238	1.158	0.215	0.016	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	59%
Ra-226	0.750	0.343	0.341	0.152		pCi/g	ARS-009/EPA 903.1	6/6/09 16:55	TRL	75%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB003 (8.0-9.0)
Sample Collection Date: 05/14/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-004
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	1.066	0.247	0.066	0.018		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	40%
TH-230	0.648	0.183	0.090	0.031		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	40%
TH-232	0.716	0.193	0.079	0.025		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JLA	40%
U-234	1.029	0.183	0.022	0.005		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	71%
U-235	0.036	0.028	0.024	0.005		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	71%
U-238	0.979	0.176	0.027	0.008		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	71%
Ra-226	-0.088	0.242	0.447	0.209		pCi/g	ARS-009/EPA 903.1	6/6/09 16:55	TRL	

NOTES:

C. Bulegy

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB003 (9.0-10.0)
Sample Collection Date: 05/14/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-016
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.798	0.182	0.047	0.013		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JB	59%
TH-230	0.819	0.187	0.083	0.032		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JB	59%
TH-232	0.902	0.195	0.046	0.013		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JB	59%
U-234	0.924	0.235	0.089	0.029		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 8:52	JB	70%
U-235	0.005	0.029	0.078	0.021	U	pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 8:52	JB	70%
U-238	1.074	0.255	0.068	0.018		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 8:52	JB	70%
Ra-226	0.228	0.211	0.325	0.149		pCi/g	ARS-009/EPA 903.1	6/6/09 18:04	BS	92%

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB004 (7.0-8.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-010
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.829	0.166	0.041	0.013		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JLA	82%
TH-230	0.429	0.111	0.065	0.025		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JLA	82%
TH-232	0.736	0.152	0.050	0.018		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JLA	82%
U-234	1.138	0.262	0.098	0.034		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 8:52	JB	82%
U-235	0.034	0.044	0.063	0.014		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 8:52	JB	82%
U-238	0.876	0.224	0.106	0.038		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 8:52	JB	82%
Ra-226	1.1849	0.4273	0.2558	0.1125		pCi/g	ARS-009/EPA 903.1	6/6/09 18:04	TRL	

NOTES:

C. Budzig
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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB004 (7.0-8.0) 51509 (DUPLICATE)
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-011
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.703	0.157	0.048	0.015		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	66%
TH-230	0.597	0.142	0.059	0.021		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	66%
TH-232	0.744	0.162	0.059	0.021		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	66%
U-234	1.015	0.191	0.044	0.015		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	69%
U-235	0.050	0.035	0.017	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	69%
U-238	1.136	0.207	0.045	0.015		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	69%
Ra-226	0.802	0.332	0.307	0.140		pCi/g	ARS-009/EPA 903.1	6/6/09 18:04	TRL	100%

NOTES:

JB
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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB004 (8.0-9.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-009
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.854	0.171	0.015	0.000		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	72%
TH-230	0.447	0.112	0.041	0.013		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	72%
TH-232	0.725	0.152	0.041	0.013		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	72%
U-234	1.379	0.282	0.085	0.030		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	38%
U-235	0.066	0.054	0.030	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	38%
U-238	1.612	0.316	0.116	0.045		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	38%
Ra-226	0.517	0.126	0.109	0.046		pCi/g	ARS-009/EPA 903.1	5/25/09 16:39	TRL	98%

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1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB004 (9.0-10.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-012
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.783	0.157	0.044	0.015		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	76%
TH-230	0.617	0.133	0.043	0.015		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	76%
TH-232	0.795	0.158	0.052	0.019		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:25	JB	76%
U-234	1.533	0.259	0.047	0.016		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 4:31	JB	68%
U-235	0.067	0.041	0.017	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 4:31	JB	68%
U-238	1.291	0.228	0.049	0.017		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 4:31	JB	68%
Ra-226	0.490	0.200	0.168	0.075		pCi/g	ARS-009/EPA 903.1	5/26/09 4:18	BS	90%

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
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ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB005 (4.0-5.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-013
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.390	0.164	0.126	0.053		pCi/g	ARS-009/EPA 903.1	05/26/09 04:19	BS	100%
TH-228	0.350	0.153	0.103	0.031		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	35%
TH-230	0.183	0.118	0.133	0.047		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	35%
TH-232	0.212	0.115	0.081	0.021		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	35%
U-234	1.396	0.257	0.034	0.008		pCi/g	ARS-029/Eichrom ACW-03-13	05/27/09 04:31	JB	54%
U-235	0.078	0.051	0.040	0.009		pCi/g	ARS-029/Eichrom ACW-03-13	05/27/09 04:31	JB	54%
U-238	1.358	0.251	0.019	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	05/27/09 04:31	JB	54%

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ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB005 (5.0-6.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-014
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.845	0.178	0.040	0.011		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JLA	67%
TH-230	0.803	0.173	0.070	0.026		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JLA	67%
TH-232	0.725	0.160	0.054	0.019		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JLA	67%
U-234	0.937	0.181	0.047	0.016		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	66%
U-235	0.041	0.032	0.017	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	66%
U-238	1.112	0.204	0.033	0.009		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 0:03	JB	66%
Ra-226	0.512	0.203	0.153	0.067		pCi/g	ARS-009/EPA 903.1	5/26/09 5:00	BS	100%

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ARS INTERNATIONAL

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1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01489
Client Sample ID: PNV-SO-SU17-SB005 (6.0-7.0) 51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01489-015
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.866	0.177	0.046	0.015		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JB	71%
TH-230	0.589	0.137	0.045	0.014		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JB	71%
TH-232	0.702	0.152	0.016	0.000		pCi/g	ARS31/EICHROMAW-10	6/6/09 19:26	JB	71%
U-234	0.951	0.177	0.036	0.011		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 4:31	JB	73%
U-235	0.047	0.033	0.016	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 4:31	JB	73%
U-238	1.025	0.186	0.013	0.000		pCi/g	ARS-026/EICHROMACW-03-15	5/27/09 4:31	JB	73%
Ra-226	0.796	0.364	0.399	0.185		pCi/g	ARS-009/EPA 903.1	5/26/09 5:42	BS	60%

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB001 (3.0-4.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-009
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.831	0.248	0.092	0.025		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	51%
U-235	0.031	0.053	0.090	0.020		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	51%
U-238	0.946	0.267	0.078	0.017		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	51%
RA-226	0.696	0.246	0.155	0.070		pCi/g	ARS-009/EPA 903.1	5/27/09 10:06	BJS	44%
TH-228	1.232	0.333	0.120	0.035		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-230	0.604	0.225	0.153	0.052		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-232	1.086	0.307	0.127	0.039		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB001 (4.0-5.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-013
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.587	0.367	0.112	0.035		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	54%
U-235	0.067	0.073	0.090	0.020	U	pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	54%
U-238	1.484	0.352	0.120	0.039		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	54%
RA-226	2.235	0.675	0.120	0.052		pCi/g	ARS-009/EPA 903.1	5/27/09 11:54	TL	100%
TH-228	0.765	0.204	0.030	0.000		pCi/g	ARS-31/Eichrom ACW-10	6/7/09 23:36	JB	69%
TH-230	0.541	0.166	0.064	0.017		pCi/g	ARS-31/Eichrom ACW-10	6/7/09 23:36	JB	69%
TH-232	0.803	0.209	0.064	0.017		pCi/g	ARS-31/Eichrom ACW-10	6/7/09 23:36	JB	69%

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01496	**Request or PO Number:**	N/A
Client Sample ID:	PNV-SO-SU22SB001 (5.0-6.0) 51709	**ARS Sample ID:**	ARS1-09-01496-011
Sample Collection Date:	05/17/09	**Date Received:**	05/20/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.905	0.273	0.156	0.055		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	53%
U-235	0.045	0.069	0.113	0.030		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	53%
U-238	0.998	0.281	0.082	0.018		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	53%
RA-226	0.295	0.188	0.263	0.124		pCi/g	ARS-009/EPA 903.1	5/27/09 11:15	BJS	94%
TH-228	0.871	0.230	0.080	0.023		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-230	0.515	0.166	0.032	0.000		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-232	0.693	0.199	0.078	0.023		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01496	**Request or PO Number:**	N/A
Client Sample ID:	PNV-SO-SU22SB002 (4.0-5.0) 51709	**ARS Sample ID:**	ARS1-09-01496-010
Sample Collection Date:	05/17/09	**Date Received:**	05/20/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.381	0.158	0.126	0.045		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	52%
U-235	0.021	0.036	0.043	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	52%
U-238	0.299	0.130	0.037	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	52%
RA-226	0.925	0.308	0.146	0.065		pCi/g	ARS-009/EPA 903.1	5/27/09 11:57	BJS	100%
TH-228	0.650	0.221	0.082	0.018		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-230	0.678	0.224	0.095	0.254		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-232	0.758	0.239	0.095	0.025		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	

NOTES:

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB002 (5.0-6.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-014
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.995	0.271	0.098	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	54%
U-235	0.017	0.034	0.047	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	54%
U-238	0.948	0.271	0.169	0.064		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	54%
RA-226	0.386	0.158	0.123	0.054		pCi/g	ARS-009/EPA 903.1	5/27/09 11:56	BJS	73%
TH-228	0.686	0.180	0.056	0.015		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-230	0.494	0.148	0.067	0.021		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-232	0.736	0.187	0.066	0.021		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	

NOTES:

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB002 (5.0-6.0) 51709 (FIELD DUPLICATE)
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-015
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.894	0.261	0.080	0.018		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	52%
U-235	0.044	0.067	0.110	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	52%
U-238	0.946	0.274	0.132	0.044		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	52%
RA-226	0.171	0.139	0.210	0.098		pCi/g	ARS-009/EPA 903.1	5/27/09 11:56	BJS	99%
TH-228	0.751	0.205	0.075	0.022		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-230	0.529	0.166	0.073	0.021		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-232	0.487	0.160	0.086	0.028		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB002 (6.0-7.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-012
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.091	0.338	0.168	0.054		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	36%
U-235	0.051	0.071	0.069	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	36%
U-238	1.332	0.375	0.128	0.034		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	36%
RA-226	0.624	0.217	0.099	0.042		pCi/g	ARS-009/EPA 903.1	5/27/09 11:39	BJS	100%
TH-228	0.930	0.288	0.096	0.265		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-230	0.501	0.204	0.111	0.030		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	
TH-232	0.595	0.231	0.169	0.589		pCi/g	ARS-31EICHROMACW-10	6/7/09 23:36	JB	

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB002 (6.0-7.0) 51709 (Duplicate)
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-016
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.878	0.248	0.109	0.035		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	60%
U-235	0.077	0.074	0.081	0.018		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	60%
U-238	1.086	0.277	0.039	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	60%
RA-226	0.495	0.203	0.177	0.080		pCi/g	ARS-009/EPA 903.1	5/27/09 12:43	TL	90%

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU22SB003 (3.0-4.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-005
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	2.103	0.731	0.425	0.191		pCi/g	ARS-009/EPA 903.1	05/26/09 15:27	BS	37%
TH-228	1.038	0.194	0.128	0.058		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:54	JB	62%
TH-230	1.318	0.219	0.065	0.027		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:54	JB	62%
TH-232	0.786	0.153	0.082	0.035		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:54	JB	62%
U-234	1.313	0.295	0.078	0.023		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	71%
U-235	0.019	0.041	0.081	0.022	U	pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	71%
U-238	1.259	0.287	0.085	0.026		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	71%

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU22SB003 (4.0-5.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-001
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.259	0.461	0.326	0.148		pCi/g	ARS-009/EPA 903.1		BS	100%
TH-228	0.762	0.182	0.070	0.024		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	54%
TH-230	0.563	0.153	0.088	0.033		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	54%
TH-232	0.814	0.185	0.021	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	54%
U-234	1.259	0.297	0.111	0.038		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	64%
U-235	0.055	0.069	0.107	0.033		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	64%
U-238	1.222	0.289	0.085	0.025		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	64%

NOTES:

C. Bulezy

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1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU22SB003 (5.0-6.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-006
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.704	0.251	0.145	0.064		pCi/g	ARS-009/EPA 903.1	05/26/09 17:18	BS	100%
TH-228	0.791	0.152	0.062	0.025		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:54	JB	59%
TH-230	0.926	0.166	0.011	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:54	JB	59%
TH-232	0.752	0.143	0.011	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:54	JB	59%
U-234	0.590	0.185	0.082	0.024		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	69%
U-235	0.053	0.058	0.071	0.016	U	pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	69%
U-238	0.634	0.196	0.107	0.036		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	69%

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2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU22SB004 (4.0-5.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-002
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.610	0.251	0.235	0.108		pCi/g	ARS-009/EPA 903.1		BS	100%
TH-228	0.942	0.207	0.050	0.014		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	54%
TH-230	0.702	0.174	0.089	0.033		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	54%
TH-232	0.717	0.174	0.069	0.024		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	54%
U-234	1.407	0.303	0.075	0.022		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	72%
U-235	0.049	0.053	0.066	0.015		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	72%
U-238	1.289	0.291	0.129	0.049		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	72%

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU22SB004 (5.0-6.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-003
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.209	0.448	0.300	0.133		pCi/g	ARS-009/EPA 903.1		BS	54%
TH-228	0.932	0.188	0.047	0.015		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	68%
TH-230	0.497	0.125	0.046	0.015		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	68%
TH-232	0.770	0.165	0.063	0.023		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	68%
U-234	1.109	0.262	0.083	0.026		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	77%
U-235	0.054	0.054	0.037	0.000		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	77%
U-238	0.834	0.221	0.089	0.029		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	77%

NOTES:

C. Bailey

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU22SB004 (6.0-7.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-004
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.213	0.204	0.318	0.146		pCi/g	ARS-009/EPA 903.1		BS	69%
TH-228	0.956	0.221	0.071	0.023		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	47%
TH-230	0.659	0.177	0.095	0.035		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	47%
TH-232	0.734	0.186	0.079	0.027		pCi/g	ARS-026/Eichrom ACW-03-15	6/6/09 19:26	JLA	47%
U-234	1.117	0.260	0.086	0.028		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	73%
U-235	0.087	0.069	0.064	0.014		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	73%
U-238	1.249	0.278	0.065	0.017		pCi/g	ARS-031/Eichrom ACW-10	6/5/2009	JLA	73%

NOTES:

C. Bailey

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB005 (3.0-4.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-006
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.791	0.264	0.126	0.037		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	45%
U-235	0.015	0.046	0.110	0.025		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	45%
U-238	0.937	0.294	0.164	0.056		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	45%
RA-226	0.509	0.252	0.272	0.121		pCi/g	ARS-009/EPA 903.1	6/6/09 18:06	BJS	
TH-228	0.770	0.332	0.150	0.029		pCi/g	ARS-31EICHROMACW-10	6/8/09 9:37	JB	63%
TH-230	0.409	0.240	0.179	0.045		pCi/g	ARS-31EICHROMACW-10	6/8/09 9:37	JB	63%
TH-232	0.622	0.291	0.130	0.020		pCi/g	ARS-31EICHROMACW-10	6/8/09 9:37	JB	63%

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB005 (4.0-5.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-005
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.913	0.253	0.094	0.028		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	59%
U-235	0.056	0.068	0.098	0.026		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	59%
U-238	1.254	0.307	0.103	0.032		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	59%
RA-226	0.374	0.167	0.173	0.079		pCi/g	ARS-009/EPA 903.1	5/27/09 0:55	BJS	
TH-228	0.802	0.229	0.08	0.021		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	57%
TH-230	0.702	0.212	0.102	0.033		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	57%
TH-232	0.638	0.198	0.066	0.015		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	57%

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB005 (5.0-6.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-001
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.895	0.224	0.092	0.031		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	75%
U-235	0.071	0.068	0.089	0.028	U	pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	75%
U-238	1.059	0.247	0.070	0.021		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	75%
RA-226	1.350	0.467	0.251	0.112		pCi/g	ARS-009/EPA 903.1	5/6/09 18:04	TL	90%
TH-228	0.410	0.131	0.025	0.000		pCi/g	ARS-031/ Eichrom ACW-10	6/16/09 14:57	JB	63%
TH-230	0.405	0.130	0.061	0.018		pCi/g	ARS-031/ Eichrom ACW-10	6/16/09 14:57	JB	63%
TH-232	0.319	0.126	0.123	0.050		pCi/g	ARS-031/ Eichrom ACW-10	6/16/09 14:57	JB	63%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB006 (7.0-8.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-008
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.498	0.158	0.030	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	63%
U-235	0.016	0.028	0.035	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	63%
U-238	0.350	0.129	0.030	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	63%
RA-226	0.794	0.274	0.155	0.070		pCi/g	ARS-009/EPA 903.1	5/27/09 2:00	BJS	86%
TH-228	1.163	0.409	0.160	0.036		pCi/g	ARS-31/Eichrom ACW-10	6/10/09 2:08	JB	3%
TH-230	1.113	0.399	0.207	0.060		pCi/g	ARS-31/Eichrom ACW-10	6/10/09 2:08	JB	3%
TH-232	1.090	0.392	0.184	0.049		pCi/g	ARS-31/Eichrom ACW-10	6/10/09 2:08	JB	3%

NOTES:

JB

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB006 (7.0-8.0) 51709 (Duplicate)
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-002
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.716	0.223	0.097	0.028		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	56%
U-235	0.046	0.060	0.085	0.019	U	pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	56%
U-238	0.878	0.259	0.167	0.063		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	56%
RA-226	0.612	0.217	0.114	0.131		pCi/g	ARS-009/EPA 903.1	5/6/09 18:04	TL	90%
TH-228	0.337	0.147	0.083	0.021		pCi/g	ARS-031/ Eichrom ACW-10	6/16/09 14:57	JB	39%
TH-230	0.594	0.193	0.122	0.041		pCi/g	ARS-031/ Eichrom ACW-10	6/16/09 14:57	JB	39%
TH-232	0.310	0.139	0.080	0.021		pCi/g	ARS-031/ Eichrom ACW-10	6/16/09 14:57	JB	39%

NOTES:

JB

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB006 (8.0-9.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-003
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.934	0.248	0.094	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	68%
U-235	0.077	0.068	0.041	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	68%
U-238	1.020	0.261	0.100	0.032		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	68%
RA-226	0.647	0.224	0.093	0.039		pCi/g	ARS-009/EPA 903.1	5/27/09 0:09	BJS	

NOTES:

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01496
Client Sample ID: PNV-SO-SU22SB006 (9.0-10.0) 51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01496-007
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.158	0.299	0.100	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	58%
U-235	0.054	0.061	0.048	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	58%
U-238	1.351	0.331	0.131	0.045		pCi/g	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	JB	58%
RA-226	0.448	0.267	0.352	0.162		pCi/g	ARS-009/EPA 903.1	5/27/09 1:59	TL	100%
TH-228	1.015	0.249	0.059	0.013		pCi/g	ARS-31/Eichrom ACW-10	6/7/09 23:36	JB	72%
TH-230	0.616	0.185	0.083	0.026		pCi/g	ARS-31/Eichrom ACW-10	6/7/09 23:36	JB	72%
TH-232	0.650	0.188	0.057	0.013		pCi/g	ARS-31/Eichrom ACW-10	6/7/09 23:36	JB	72%

NOTES:

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01542
Client Sample ID: PNV-SO-SU22SB007(7.0-8.0)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01542-003
Date Received: 05/22/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.344	0.227	0.320	0.149		pCi/g	ARS-009/EPA 903.1	06/02/09 20:14	JB	82%
TH-228	2.998	3.544	5.570	1.973	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
TH-230	6.320	3.812	1.557	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
TH-232	6.307	4.419	5.326	1.886		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
U-234	0.435	0.156	0.109	0.039		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	69%
U-235	0.014	0.027	0.037	0.000	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	69%
U-238	0.438	0.152	0.068	0.018		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	69%

NOTES: Method of shipment:Next day air/Courier:UPS/Air Bill number:1Z7RO57F2310000014/sAMPLERNAME: ERIC SCHMITT

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01542
Client Sample ID: PNV-SO-SU22SB007(8.0-9.0)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01542-002
Date Received: 05/22/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.751	0.271	0.185	0.084		pCi/g	ARS-009/EPA 903.1	06/02/09 20:14	JB	100%
TH-228	7.417	4.161	4.306	1.525		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
TH-230	10.215	5.002	5.337	2.067		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
TH-232	3.546	5.084	8.637	3.718	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
U-234	0.487	0.157	0.055	0.012		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	74%
U-235	0.004	0.028	0.075	0.020	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	74%
U-238	0.445	0.152	0.090	0.030		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	74%

NOTES: Method of shipment:Next day air/Courier:UPS/Air Bill number:1Z7RO57F2310000014/sAMPLERNAME: ERIC SCHMITT

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01542
Client Sample ID: PNV-SO-SU22SB007(9.0-10.0)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01542-001
Date Received: 05/22/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.466	0.214	0.238	0.111		pCi/g	ARS-009/EPA 903.1	06/02/09 16:51	JB	100%
TH-228	3.514	2.096	1.990	0.629		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
TH-230	4.662	2.649	3.112	1.205		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
TH-232	3.619	2.073	1.903	0.601		pCi/g	ARS-029/Eichrom ACW-03-13	06/26/09 16:49	JB	1%
U-234	0.493	0.170	0.084	0.025		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	64%
U-235	0.030	0.042	0.041	0.000	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	64%
U-238	0.518	0.184	0.145	0.055		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	64%

NOTES: Method of shipment:Next day air/Courier:UPS/Air Bill number:1Z7RO57F2310000014/sAMPLERNAME: ERIC SCHMITT

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Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO-SU23SB001(2.0-3.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01552-009
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.787	0.579	0.217	0.095		pCi/g	ARS-009/ EPA 903.1	6/3/09 19:21	BJS	100%
U-234	0.241	0.130	0.104	0.030		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	51%
U-235	0.068	0.074	0.091	0.020		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	51%
U-238	0.219	0.126	0.114	0.035		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	51%

NOTES:

JB
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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO-SU23SB001(2.0-3.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01552-009
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.787	0.579	0.217	0.095		pCi/g	AGS-A-002			
U-234	0.241	0.130	0.104	0.030		pCi/g	ASP-A-025	6/4/2009	JB	51%
U-235	0.068	0.074	0.091	0.020		pCi/g	ASP-A-025	6/4/2009	JB	51%
U-238	0.219	0.126	0.114	0.035		pCi/g	ASP-A-025	6/4/2009	JB	51%

NOTES:

C. Bulgy
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-009

Radiochemistry

Lab Sample ID: F9F010115-018
Work Order: LD4JX
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 82
Thorium 228	0.75	J	0.21	1.00	0.13	06/01/09	06/04/09
Thorium 230	1.14		0.25	1.00	0.1	06/01/09	06/04/09
Thorium 232	0.70	J	0.19	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO-SU23SB001(3.0-4.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01552-010
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	4.073	1.225	0.261	0.117		pCi/g	ARS-009/ EPA 903.1	6/3/09 19:26	BJS	100%
U-234	1.530	0.364	0.107	0.031		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	49%
U-235	0.032	0.054	0.094	0.021		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	49%
U-238	1.467	0.353	0.095	0.025		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	49%

NOTES:

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552
Client Sample ID: PNV-SO-SU23SB001(3.0-4.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01552-010
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	4.073	1.225	0.261	0.117		pCi/g	AGS-A-002			
U-234	1.530	0.364	0.107	0.031		pCi/g	ASP-A-025	6/4/2009	JB	49%
U-235	0.032	0.054	0.094	0.021		pCi/g	ASP-A-025	6/4/2009	JB	49%
U-238	1.467	0.353	0.095	0.025		pCi/g	ASP-A-025	6/4/2009	JB	49%

NOTES:

C. Bulegin
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-010

Radiochemistry

Lab Sample ID: F9F010115-019
Work Order: LD4J0
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 82
Thorium 228	0.99	J	0.23	1.00	0.11	06/01/09	06/04/09
Thorium 230	2.06		0.35	1.00	0.08	06/01/09	06/04/09
Thorium 232	1.12		0.25	1.00	0.08	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01552	**Request or PO Number:**	N/A
Client Sample ID:	PNV-SO-SU23SB001(4.0-5.0)52009	**ARS Sample ID:**	ARS1-09-01552-011
Sample Collection Date:	05/20/09	**Date Received:**	05/26/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.586	0.297	0.349	0.160		pCi/g	ARS-009/ EPA 903.1	6/3/09 19:26	BJS	100%
U-234	2.418	0.520	0.158	0.052		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	40%
U-235	0.075	0.091	0.131	0.035		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	40%
U-238	1.758	0.422	0.113	0.030		pCi/g	ARS-026/ EICHROME ACW-03-15	6/4/09 9:18	JB	40%

NOTES:

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01552

Client Sample ID: PNV-SO-SU23SB001(4.0-5.0)52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01552-011

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.586	0.297	0.349	0.160		pCi/g	AGS-A-002			
U-234	2.418	0.520	0.158	0.052		pCi/g	ASP-A-025	6/4/2009	JB	40%
U-235	0.075	0.091	0.131	0.035		pCi/g	ASP-A-025	6/4/2009	JB	40%
U-238	1.758	0.422	0.113	0.030		pCi/g	ASP-A-025	6/4/2009	JB	40%

NOTES:

C. Bulejej

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01552-011

Radiochemistry

Lab Sample ID: F9F010115-020
Work Order: LD4J1
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 79
Thorium 228	1.16		0.26	1.00	0.1	06/01/09	06/04/09
Thorium 230	1.17		0.26	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.95	J	0.23	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557
Client Sample ID: PNV-SO-SU23SB002(0.5 - 1.5)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01557-008
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.904	0.337	0.274	0.127		pCi/g	ARS-009/ EPA 903.1	6/3/09 6:48	BJS	100%
U-234	0.659	0.229	0.135	0.044		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	41%
U-235	0.060	0.068	0.054	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	41%
U-238	0.599	0.211	0.046	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	41%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-008

Radiochemistry

Lab Sample ID: F9F010117-015
Work Order: LD4LX
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 81
Thorium 228	0.82	J	0.21	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.05		0.24	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.89	J	0.21	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557

Client Sample ID: PNV-SO-SU23SB002(0.5 - 1.5)52009(DUPLICATE)

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01557-009

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	5.456	1.595	0.209	0.096		pCi/g	AGS-A-002		JB	100%
U-234	1.045	0.273	0.125	0.044		pCi/g	ASP-A-025	6/3/2009	JB	53%
U-235	0.032	0.045	0.044	0.000		pCi/g	ASP-A-025	6/3/2009	JB	53%
U-238	1.376	0.326	0.164	0.063		pCi/g	ASP-A-025	6/3/2009	JB	53%

NOTES:

C. Bulezy

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-009

Radiochemistry

Lab Sample ID: F9F010117-016
Work Order: LD4L0
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 56
Thorium 228	1.0	J	0.27	1.00	0.14	06/01/09	06/04/09
Thorium 230	1.34		0.32	1.00	0.12	06/01/09	06/04/09
Thorium 232	0.90	J	0.25	1.00	0.09	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557
Client Sample ID: PNV-SO-SU23SB002(1.5 - 2.5))52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01557-010
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	6.102	1.781	0.292	0.137		pCi/g	ARS-009/ EPA 903.1	6/3/09 7:35	BJS	97%
U-234	5.251	0.836	0.040	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	48%
U-235	0.290	0.142	0.046	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	48%
U-238	4.775	0.776	0.040	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	48%

NOTES:

JB

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-010

Radiochemistry

Lab Sample ID: F9F010117-017
Work Order: LD4L1
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 88
Thorium 228	0.84	J	0.20	1.00	0.07	06/01/09	06/04/09
Thorium 230	3.47		0.48	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.99	J	0.22	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557

Client Sample ID: PNV-SO-SU23SB002(2.5 - 3.5))52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01557-011

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.892	0.346	0.277	0.126		pCi/g	ARS-009/ EPA 903.1	6/3/09 9:04	BJS	69%
U-234	2.085	0.477	0.055	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/4/09 12:54	JB	34%
U-235	0.157	0.121	0.064	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/4/09 12:54	JB	34%
U-238	2.366	0.517	0.055	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/4/09 12:54	JB	34%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-011

Radiochemistry

Lab Sample ID: F9F010117-018
Work Order: LD4L2
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 77
Thorium 228	0.87	J	0.22	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.17		0.26	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.72	J	0.20	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554

Client Sample ID: PNV-SO-SU23SB003(2.0-3.0)51809

Sample Collection Date: 05/18/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01554-001

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.425	0.284	0.401	0.187		pCi/g	AGS-A-002		TL	100%
TH-228	1.300	0.270	0.100	0.050		pCi/g	ASP-A-009	6/4/2009	N/A	80%
TH-230	1.570	0.300	0.090	0.045		pCi/g	ASP-A-009	6/4/2009	N/A	80%
TH-232	1.330	0.270	0.060	0.030		pCi/g	ASP-A-009	6/4/2009	N/A	80%
U-234	0.364	0.160	0.142	0.052		pCi/g	ASP-A-025	6/4/2009	JB	48%
U-235	0.000	0.032	0.044	0.000		pCi/g	ASP-A-025	6/4/2009	JB	48%
U-238	0.312	0.136	0.038	0.000		pCi/g	ASP-A-025	6/4/2009	JB	48%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-001

Radiochemistry

Lab Sample ID: F9F010116-012
Work Order: LD4KM
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 80
Thorium 228	1.30		0.27	1.00	0.1	06/01/09	06/04/09
Thorium 230	1.57		0.30	1.00	0.09	06/01/09	06/04/09
Thorium 232	1.33		0.27	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554
Client Sample ID: PNV-SO-SU23SB003(3.0-4.0)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01554-002
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.019	0.226	0.402	0.188		pCi/g	AGS-A-002		TL	100%
TH-228	0.830	0.240	0.130	0.065		pCi/g	ASP-A-009	6/4/2009	N/A	63%
TH-230	1.040	0.260	0.090	0.045		pCi/g	ASP-A-009	6/4/2009	N/A	63%
TH-232	0.860	0.240	0.080	0.040		pCi/g	ASP-A-009	6/4/2009	N/A	63%
U-234	0.530	0.269	0.269	0.098		pCi/g	ASP-A-025	6/4/2009	JB	26%
U-235	0.031	0.061	0.084	0.000		pCi/g	ASP-A-025	6/4/2009	JB	26%
U-238	0.644	0.269	0.073	0.000		pCi/g	ASP-A-025	6/4/2009	JB	26%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-002

Radiochemistry

Lab Sample ID: F9F010116-013
Work Order: LD4KQ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 63
Thorium 228	0.83	J	0.24	1.00	0.13	06/01/09	06/04/09
Thorium 230	1.04		0.26	1.00	0.09	06/01/09	06/04/09
Thorium 232	0.86	J	0.24	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554
Client Sample ID: PNV-SO-SU23SB003(4.0-5.0)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01554-003
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.985	0.366	0.233	0.102		pCi/g	AGS-A-002		TL	100%
TH-228	0.990	0.230	0.100	0.050		pCi/g	ASP-A-009	6/4/2009	N/A	77%
TH-230	1.020	0.230	0.060	0.030		pCi/g	ASP-A-009	6/4/2009	N/A	77%
TH-232	1.030	0.230	0.060	0.030		pCi/g	ASP-A-009	6/4/2009	N/A	77%
U-234	0.809	0.220	0.095	0.031		pCi/g	ASP-A-025	6/4/2009	JB	60%
U-235	0.000	0.028	0.038	0.000		pCi/g	ASP-A-025	6/4/2009	JB	60%
U-238	0.411	0.147	0.033	0.000		pCi/g	ASP-A-025	6/4/2009	JB	60%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Tom Segal
Project Manager Review

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LELAP Certificate# 01949 · NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-003

Radiochemistry

Lab Sample ID: F9F010116-014
Work Order: LD4KT
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 77
Thorium 228	0.99	J	0.23	1.00	0.10	06/01/09	06/04/09
Thorium 230	1.02		0.23	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.03		0.23	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU23SB004 (6.0-7.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-007
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.483	0.185	0.117	0.050		pCi/g	ARS-009/EPA 903.1	5/26/09 12:34	BS	100%
U-234	1.075	0.289	0.103	0.030		pCi/g	ARS-026/Eichrom ACW-03-15	5/30/09 10:21	JB	57%
U-235	0.037	0.051	0.050	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	5/30/09 10:21	JB	57%
U-238	1.288	0.324	0.134	0.046		pCi/g	ARS-026/Eichrom ACW-03-15	5/30/09 10:21	JB	57%
TH-228	0.184	0.108	0.082	0.021		pCi/g	ARS-031/Eichrom ACW-10	6/16/09 14:58	JB	41%
TH-230	0.414	0.162	0.096	0.029		pCi/g	ARS-031/Eichrom ACW-10	6/16/09 14:58	JB	41%
TH-232	0.128	0.092	0.096	0.029		pCi/g	ARS-031/Eichrom ACW-10	6/16/09 14:58	JB	41%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU23SB004 (7.0-8.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-008
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.245	0.182	0.268	0.126	U	pCi/g	ARS-009/EPA 903.1	05/26/09 17:18	BS	100%
TH-228	0.686	0.179	0.192	0.089		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	46%
TH-230	0.998	0.187	0.055	0.020		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	46%
TH-232	0.769	0.155	0.014	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	46%
U-234	1.411	0.296	0.062	0.017		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	66%
U-235	0.037	0.043	0.034	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	66%
U-238	1.394	0.295	0.087	0.029		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	66%

NOTES:

JB
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU23SB004 (8.0-9.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-009
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.835	0.297	0.198	0.090		pCi/g	ARS-009/EPA 903.1	05/26/09 17:27	BS	100%
TH-228	0.845	0.159	0.091	0.040		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	70%
TH-230	1.256	0.205	0.056	0.023		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	70%
TH-232	0.890	0.157	0.010	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	70%
U-234	1.153	0.264	0.065	0.017		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	74%
U-235	0.035	0.045	0.064	0.014	U	pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	74%
U-238	1.110	0.257	0.055	0.012		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	74%

NOTES:

JB
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537
Client Sample ID: PNV-SO-SU23SB005(5.0-6.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01537-007
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.416	0.258	0.352	0.164		pCi/g	ARS-009/EPA 903.1	05/29/09 15:35	TL	100%
TH-228	1.033	0.249	0.057	0.013		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	74%
TH-230	0.668	0.190	0.056	0.012		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	74%
TH-232	0.947	0.234	0.066	0.018		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	74%
U-234	1.811	0.379	0.147	0.056		pCi/g	ARS-029/Eichrom ACW-03-13	05/29/09 16:47	JB	63%
U-235	0.127	0.092	0.088	0.024		pCi/g	ARS-029/Eichrom ACW-03-13	05/29/09 16:47	JB	63%
U-238	1.650	0.358	0.157	0.061		pCi/g	ARS-029/Eichrom ACW-03-13	05/29/09 16:47	JB	63%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537
Client Sample ID: PNV-SO-SU23SB005(6.0-7.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01537-008
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	-0.219	0.211	0.391	0.184	U	pCi/g	ARS-009/EPA 903.1	05/29/09 15:35	TL	95%
TH-228	0.368	0.134	0.061	0.016		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	53%
TH-230	0.874	0.221	0.103	0.037		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	53%
TH-232	0.293	0.119	0.081	0.026		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	53%
U-234	0.482	0.145	0.065	0.020		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 02:11	JB	74%
U-235	-0.018	0.032	0.099	0.035	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 02:11	JB	74%
U-238	0.413	0.133	0.068	0.021		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 02:11	JB	74%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537
Client Sample ID: PNV-SO-SU23SB005(6.0-7.0)52009(DUPLICATE)
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01537-009
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.907	0.676	0.468	0.216		pCi/g	ARS-009/EPA 903.1	05/29/09 15:35	TL	63%
TH-228	0.604	0.285	0.181	0.048		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	26%
TH-230	0.529	0.263	0.177	0.047		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	26%
TH-232	0.853	0.332	0.083	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	26%
U-234	1.645	0.343	0.103	0.035		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	66%
U-235	0.094	0.081	0.100	0.031	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	66%
U-238	1.911	0.378	0.079	0.023		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	66%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

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Project Manager Review

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537
Client Sample ID: PNV-SO-SU23B005(7.0-8.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01537-010
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.050	0.181	0.318	0.148	U	pCi/g	ARS-009/EPA 903.1	05/29/09 15:35	TL	95%
TH-228	0.891	0.260	0.080	0.018		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	55%
TH-230	0.796	0.246	0.129	0.043		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	55%
TH-232	0.662	0.217	0.078	0.017		pCi/g	ARS-029/Eichrom ACW-03-13	06/08/09 09:37	JB	55%
U-234	1.560	0.332	0.080	0.023		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	71%
U-235	0.081	0.070	0.070	0.016		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	71%
U-238	1.373	0.310	0.137	0.052		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	71%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

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Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537

Client Sample ID: PNV-SO-SU23SB006(9.0-10.0)52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01537-004

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.714	0.314	0.316	0.144		pCi/g	AGS-A-002		TL	100%
U-234	1.219	0.316	0.147	0.052		pCi/g	ASP-A-025	5/30/2009	JB	47%
U-235	0.073	0.072	0.050	0.000		pCi/g	ASP-A-025	5/30/2009	JB	47%
U-238	1.474	0.349	0.092	0.025		pCi/g	ASP-A-025	5/30/2009	JB	47%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

C. Bulej

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537

Client Sample ID: PNV-SO-SU23SB006(10.0-11.0)52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01537-005

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.836	0.330	0.262	0.117		pCi/g	AGS-A-002		TL	93%
U-234	0.922	0.244	0.065	0.015		pCi/g	ASP-A-025	5/29/2009	JB	64%
U-235	0.010	0.032	0.075	0.017		pCi/g	ASP-A-025	5/29/2009	JB	64%
U-238	1.224	0.293	0.112	0.038		pCi/g	ASP-A-025	5/29/2009	JB	64%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

C. Bulgy

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01537
Client Sample ID: PNV-SO-SU23SB006(11.0-12.0)52009
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01537-006
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.522	0.546	0.276	0.117		pCi/g	AGS-A-002		TL	56%
U-234	0.975	0.255	0.148	0.057		pCi/g	ASP-A-025	5/29/2009	JB	60%
U-235	0.010	0.044	0.102	0.031		pCi/g	ASP-A-025	5/29/2009	JB	60%
U-238	0.924	0.247	0.148	0.057		pCi/g	ASP-A-025	5/29/2009	JB	60%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0078 Eric Schmitt

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU25SB001(5.0-6.0)51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-014
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.657	0.241	0.172	0.078		pCi/g	ARS-009/EPA 903.1	6/1/09 15:46	BJS	100%
U-234	0.847	0.232	0.085	0.025		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	67%
U-235	0.091	0.081	0.098	0.029		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	67%
U-238	0.919	0.244	0.092	0.029		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	67%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-014

Radiochemistry

Lab Sample ID: F9F010114-007
Work Order: LD4HF
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 83
Thorium 228	1.08		0.24	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.07		0.24	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.0	J	0.23	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541

Client Sample ID: PNV-SO-SU25SB001(6.0-7.0)51909

Sample Collection Date: 05/19/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01541-016

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.685	0.263	0.226	0.105		pCi/g	ARS-009/EPA 903.1	6/1/09 17:07	BJS	100%
U-234	0.562	0.195	0.150	0.057		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 19:28	JB	64%
U-235	0.067	0.070	0.090	0.024		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 19:28	JB	64%
U-238	0.507	0.188	0.160	0.062		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 19:28	JB	64%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-016

Radiochemistry

Lab Sample ID: F9F010114-009
Work Order: LD4HL
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 82
Thorium 228	1.33		0.27	1.00	0.07	06/01/09	06/04/09
Thorium 230	1.27		0.26	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.17		0.25	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU25SB001(7.0-8.0)51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-015
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.138	0.101	0.141	0.063		pCi/g	ARS-009/EPA 903.1	6/1/09 16:09	BJS	60%
U-234	0.507	0.161	0.083	0.027		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	79%
U-235	0.008	0.026	0.062	0.014		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	79%
U-238	0.491	0.155	0.030	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	79%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-015

Radiochemistry

Lab Sample ID: F9F010114-008
Work Order: LD4HK
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 86
Thorium 228	1.12		0.25	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.10		0.24	1.00	0.05	06/01/09	06/04/09
Thorium 232	1.12		0.24	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU25SB002(6.0-7.0)51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-017
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.270	0.185	0.266	0.125		pCi/g	ARS-009/EPA 903.1	6/1/09 17:07	BJS	77%
U-234	0.720	0.202	0.088	0.028		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 9:57	JB	75%
U-235	0.049	0.054	0.066	0.015		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 9:57	JB	75%
U-238	0.830	0.216	0.031	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 9:57	JB	75%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-017

Radiochemistry

Lab Sample ID: F9F010114-010
Work Order: LD4HN
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 80
Thorium 228	1.40		0.29	1.00	0.1	06/01/09	06/04/09
Thorium 230	1.32		0.27	1.00	0.08	06/01/09	06/04/09
Thorium 232	1.51		0.30	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU25SB002(7.0-8.0)51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01541-018
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.627	0.224	0.130	0.057		pCi/g	ARS-009/EPA 903.1	6/1/09 17:07	BJS	100%
U-234	1.105	0.267	0.108	0.038		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 19:28	JB	71%
U-235	0.023	0.040	0.069	0.015	U	pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 19:28	JB	71%
U-238	1.094	0.266	0.116	0.042		pCi/g	ARS-026/EICHROMACW-03-15	6/4/09 19:28	JB	71%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-018

Radiochemistry

Lab Sample ID: F9F010114-011
Work Order: LD4HP
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 93
Thorium 228	1.04		0.22	1.00	0.05	06/01/09	06/04/09
Thorium 230	1.22		0.25	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.03		0.22	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01540
Client Sample ID: PNV-SO-SU25SB002(8.0-9.0)51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01540-001
Date Received: 05/22/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.262	0.235	0.364	0.170	U	pCi/g	ARS-009/EPA 903.1	05/29/09 02:09	BJS	100%
U-234	0.723	0.259	0.134	0.039		pCi/g	ARS-029/Eichrom ACW-03-13	06/03/09 14:18	JB	40%
U-235	0.032	0.070	0.139	0.037	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/03/09 14:18	JB	40%
U-238	1.169	0.340	0.146	0.045		pCi/g	ARS-029/Eichrom ACW-03-13	06/03/09 14:18	JB	40%

NOTES: Date and Time of Shipment: 05-21-09, Air Bill Number: 12 7RO 57F 23 1000 0032 Eric Schmitt

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01540-001

Radiochemistry

Lab Sample ID: F9F010113-012
Work Order: LD4GT
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 77
Thorium 228	0.57	J	0.18	1.00	0.1	06/01/09	06/05/09
Thorium 230	0.60	J	0.18	1.00	0.07	06/01/09	06/05/09
Thorium 232	0.59	J	0.18	1.00	0.07	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01540
Client Sample ID: PNV-SO-SU25SB002(8.0-9.0)51909(DUPLICATE)
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01540-002
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.836	0.314	0.221	0.098		pCi/g	AGS-A-002	5/28/2009	BJS	
U-234	0.949	0.244	0.081	0.024		pCi/g	ASP-A-025	6/3/2009	JB	71%
U-235	0.039	0.050	0.071	0.016		pCi/g	ASP-A-025	6/3/2009	JB	71%
U-238	1.030	0.258	0.106	0.036		pCi/g	ASP-A-025	6/3/2009	JB	71%

NOTES: Date and Time of Shipment: 05-21-09, Air Bill Number: 12 7RO 57F 23 1000 0032 Eric Schmitt

C. Bulgo
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01540-002

Radiochemistry

Lab Sample ID: F9F010113-013
Work Order: LD4GV
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 85
Thorium 228	0.63	J	0.18	1.00	0.09	06/01/09	06/05/09
Thorium 230	0.70	J	0.19	1.00	0.08	06/01/09	06/05/09
Thorium 232	0.61	J	0.17	1.00	0.06	06/01/09	06/05/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU26SB001(3.0-4.0)51909
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-005
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.404	0.501	0.250	0.105		pCi/g	ARS-009/EPA 903.1	5/28/09 15:39	BJS	81%
U-234	0.583	0.182	0.108	0.038		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	75%
U-235	0.018	0.040	0.079	0.021	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	75%
U-238	0.566	0.174	0.057	0.013		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	75%

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01539-005

Radiochemistry

Lab Sample ID: F9F010113-009
Work Order: LD4GP
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152263		Yld % 91
Thorium 228	0.27	J	0.11	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.57	J	0.16	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.232	J	0.0998	1.00	0.058	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU26SB001(4.0-5.0)51909
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-006
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.558	0.163	0.075	0.024		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	81%
U-235	0.011	0.023	0.031	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	81%
U-238	0.438	0.141	0.057	0.015		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	81%
RA-226	1.281	0.427	0.161	0.069		pCi/g	ARS-009/EPA 903.1	5/29/09 1:24	BJS	

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01539-006

Radiochemistry

Lab Sample ID: F9F010113-010
Work Order: LD4GQ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 85
Thorium 228	0.69	J	0.19	1.00	0.13	06/01/09	06/05/09
Thorium 230	0.66	J	0.19	1.00	0.1	06/01/09	06/05/09
Thorium 232	0.62	J	0.18	1.00	0.07	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU26SB001(5.0-6.0)51909
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-007
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.495	0.295	0.383	0.175		pCi/g	ARS-009/EPA 903.1	5/29/09 1:24	BJS	82%
U-234	0.562	0.165	0.072	0.022		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	78%
U-235	0.008	0.024	0.057	0.013	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	78%
U-238	0.557	0.164	0.077	0.025		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	78%

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

Test Pit Analytical Reports

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU14TP001-S-51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-001
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.444	0.195	0.149	0.050		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	42%
U-235	0.029	0.063	0.124	0.033		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	42%
U-238	0.596	0.220	0.107	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	42%
RA-226	0.137	0.267	0.456	0.211		pCi/g	ARS-009/EPA 903.1	5/28/09 14:55	BJS	

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01539-001

Radiochemistry

Lab Sample ID: F9F010113-005
Work Order: LD4GJ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 85
Thorium 228	0.26	J	0.12	1.00	0.09	06/01/09	06/04/09
Thorium 230	0.60	J	0.17	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.38	J	0.13	1.00	0.05	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU14TP001BT51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-008
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.024	0.329	0.134	0.036		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	36%
U-235	0.071	0.093	0.131	0.029	U	pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	36%
U-238	1.075	0.336	0.113	0.025		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	36%
RA-226	0.534	0.424	0.636	0.297		pCi/g	ARS-009/EPA 903.1	5/28/09 2:04	BJS	41%
TH-228	0.823	0.362	0.214	0.057		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	23%
TH-230	0.659	0.329	0.274	0.088		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	23%
TH-232	0.454	0.260	0.176	0.039		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	23%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU14TP001SW(5.0)51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-007
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.263	0.330	0.101	0.027		pCi/g	ARS-026/Eichrom ACW-03-1S	5/31/09 10:33	JB	44%
U-235	0.081	0.080	0.055	0.000		pCi/g	ARS-026/Eichrom ACW-03-1S	5/31/09 10:33	JB	44%
U-238	1.150	0.315	0.141	0.047		pCi/g	ARS-026/Eichrom ACW-03-1S	5/31/09 10:33	JB	44%
RA-226	0.446	0.220	0.262	0.122		pCi/g	ARS-009/EPA 903.1	5/28/09 1:11	BJS	50%
TH-228	1.060	0.300	0.104	0.028		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	50%
TH-230	0.911	0.278	0.155	0.054		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	50%
TH-232	1.090	0.304	0.123	0.038		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	50%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulegij

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU14TP001SW(5.0) 51709 (Duplicate)
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-009
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.997	0.276	0.103	0.030		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
U-235	0.055	0.063	0.050	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
U-238	1.058	0.284	0.043	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
RA-226	0.576	0.314	0.394	0.182		pCi/g	ARS-009/EPA 903.1	5/28/09 2:04	BJS	100%
TH-228	0.848	0.285	0.059	0.000		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	40%
TH-230	0.834	0.282	0.123	0.033		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	40%
TH-232	0.677	0.270	0.237	0.090		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	40%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU14TP002-S-51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-012
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.908	0.308	0.141	0.062		pCi/g	ARS-009/EPA 903.1	05/26/09 18:32	BS	93%
TH-228	0.537	0.156	0.026	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	53%
TH-230	0.680	0.179	0.064	0.019		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	53%
TH-232	0.254	0.103	0.063	0.019		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	53%
U-234	0.863	0.211	0.084	0.029		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	84%
U-235	0.023	0.032	0.031	0.000	U	pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	84%
U-238	0.718	0.187	0.064	0.019		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	84%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU14TP002-BT51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01502-011
Date Received: 05/20/09
Report Date: 07/17/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.423	0.181	0.173	0.078		pCi/g	ARS-009/EPA 903.1	05/26/09 18:32	BS	100%
TH-228	0.640	0.238	0.229	0.093		pCi/g	ARS-029/Eichrom ACW-03-13	06/10/09 02:08	BS	48%
TH-230	3.102	0.574	0.181	0.070		pCi/g	ARS-029/Eichrom ACW-03-13	06/10/09 02:08	BS	48%
TH-232	0.580	0.214	0.183	0.071		pCi/g	ARS-029/Eichrom ACW-03-13	06/10/09 02:08	BS	48%
U-234	1.030	0.245	0.072	0.021		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	77%
U-235	0.051	0.051	0.035	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	77%
U-238	1.057	0.249	0.078	0.024		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	77%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU14TP002-WW (1.5-2.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-010
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.778	0.281	0.199	0.091		pCi/g	ARS-009/EPA 903.1	05/26/09 17:58	BS	100%
TH-228	0.187	0.120	0.124	0.040		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	33%
TH-230	0.519	0.188	0.043	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	33%
TH-232	0.212	0.125	0.120	0.039		pCi/g	ARS-029/Eichrom ACW-03-13	06/16/09 14:58	JB	33%
U-234	1.389	0.285	0.079	0.026		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	82%
U-235	0.128	0.079	0.066	0.018		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	82%
U-238	1.799	0.339	0.057	0.015		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	82%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01502	**Request or PO Number:**	N/A
Client Sample ID:	PNV-SO-SU14TP002-NM(6.0)51809	**ARS Sample ID:**	ARS1-09-01502-014
Sample Collection Date:	05/18/09	**Date Received:**	05/20/09
Sample Matrix:	Soil/Solid	**Report Date:**	07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.490	0.206	0.184	0.082		pCi/g	ARS-009/EPA 903.1	05/26/09 19:02	BS	93%
TH-228	0.910	0.184	0.119	0.052		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	57%
TH-230	1.006	0.193	0.108	0.047		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	57%
TH-232	0.978	0.190	0.109	0.048		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	57%
U-234	1.070	0.241	0.065	0.019		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	77%
U-235	0.035	0.040	0.031	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	77%
U-238	1.187	0.257	0.027	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	77%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU14TP003-S-51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-003
Date Received: 05/22/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.021	0.398	0.339	0.156		pCi/g	ARS-009/EPA 903.1	05/28/09 15:30	BJS	100%
U-234	0.247	0.110	0.089	0.030		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	79%
U-235	0.024	0.034	0.033	0.000	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	79%
U-238	0.177	0.090	0.068	0.020		pCi/g	ARS-029/Eichrom ACW-03-13	06/07/09 15:26	JB	79%

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

C. Bouligny

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01539-003

Radiochemistry

Lab Sample ID: F9F010113-007
Work Order: LD4GL
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g			Batch # 9152263	Yld % 85
Thorium 228	0.45	J	0.15	1.00	0.06	06/01/09	06/04/09
Thorium 230	0.69	J	0.18	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.37	J	0.13	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU14TP003BT51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-013
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.667	0.256	0.218	0.101		pCi/g	ARS-009/EPA 903.1	6/1/09 15:46	BJS	95%
U-234	0.946	0.245	0.114	0.040		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	66%
U-235	0.014	0.028	0.039	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	66%
U-238	1.168	0.275	0.071	0.019		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	66%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-013

Radiochemistry

Lab Sample ID: F9F010114-006
Work Order: LD4HE
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 87
Thorium 228	0.98	J	0.22	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.24		0.25	1.00	0.05	06/01/09	06/04/09
Thorium 232	1.27		0.26	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU14TP003WW(4.0-4.5)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01541-011
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.508	0.198	0.164	0.075		pCi/g	ARS-009/EPA 903.1	6/1/09 15:46	BJS	75%
U-234	0.771	0.418	0.334	0.098		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	15%
U-235	0.119	0.166	0.161	0.000	U	pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	15%
U-238	0.359	0.374	0.575	0.218	U	pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	15%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-011

Radiochemistry

Lab Sample ID: F9F010114-004
Work Order: LD4HC
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 85
Thorium 228	0.81	J	0.21	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.95	J	0.22	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.81	J	0.20	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01541	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU14TP003WW(4.0-4.5)51609(DUPLICATE)	**ARS Sample ID:**	ARS1-09-01541-010
Sample Collection Date:	05/16/09	**Date Received:**	05/22/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.843	0.304	0.230	0.107		pCi/g	ARS-009/EPA 903.1	6/1/09 15:46	BJS	92%
U-234	0.802	0.230	0.097	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	58%
U-235	0.026	0.045	0.078	0.017		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	58%
U-238	0.891	0.245	0.104	0.033		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	58%

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-010

Radiochemistry

Lab Sample ID: F9F010114-003
Work Order: LD4HA
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152303		Yld % 78
Thorium 228	0.91	J	0.22	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.10		0.25	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.02		0.24	1.00	0.05	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU14TP003SW(5.0-5.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-012
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.309	0.176	0.233	0.109		pCi/g	ARS-009/EPA 903.1	6/1/09 15:46	BJS	100%
U-234	0.671	0.230	0.087	0.020		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	48%
U-235	0.048	0.073	0.120	0.032		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	48%
U-238	0.907	0.278	0.144	0.048		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	48%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-012

Radiochemistry

Lab Sample ID: F9F010114-005
Work Order: LD4HD
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 89
Thorium 228	1.10		0.24	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.18		0.25	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.37		0.27	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU15TP001S51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-007
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.582	0.208	0.101	0.042		pCi/g	ARS-009/EPA 903.1	6/1/09 5:20	BJS	100%
U-234	0.833	0.272	0.126	0.037		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	43%
U-235	0.022	0.044	0.061	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	43%
U-238	0.889	0.278	0.052	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	43%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-007

Radiochemistry

Lab Sample ID: F9F010113-020
Work Order: LD4G6
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/g**		**Batch # 9152263**	**Yld % 86**
Thorium 228	0.54	J	0.17	1.00	0.08	06/01/09	06/05/09
Thorium 230	0.74	J	0.20	1.00	0.07	06/01/09	06/05/09
Thorium 232	0.38	J	0.14	1.00	0.07	06/01/09	06/05/09

NOTE(S)

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MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU15TP001BT51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-006
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.676	0.243	0.150	0.067		pCi/g	ARS-009/EPA 903.1	6/1/09 5:20	BJS	100%
U-234	0.483	0.289	0.301	0.102		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	23%
U-235	0.164	0.162	0.111	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	23%
U-238	0.740	0.338	0.229	0.067		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	23%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-006

Radiochemistry

Lab Sample ID: F9F010113-019
Work Order: LD4G5
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g			Batch # 9152263	Yld % 89
Thorium 228	0.51	J	0.16	1.00	0.07	06/01/09	06/05/09
Thorium 230	0.96	J	0.22	1.00	0.06	06/01/09	06/05/09
Thorium 232	0.81	J	0.20	1.00	0.05	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU15TP001EW(2.0-3.0)51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-008
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.029	0.359	0.250	0.117		pCi/g	ARS-009/EPA 903.1	6/1/09 6:12	BJS	62%
U-234	1.079	0.279	0.130	0.046		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	64%
U-235	-0.011	0.015	0.094	0.025		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	64%
U-238	1.170	0.288	0.069	0.015		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	64%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Mary Foston
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-008

Radiochemistry

Lab Sample ID: F9F010114-001
Work Order: LD4G7
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 88
Thorium 228	1.35		0.27	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.49		0.29	1.00	0.09	06/01/09	06/04/09
Thorium 232	1.11		0.24	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-008 DUP

Radiochemistry

Lab Sample ID: F9F010114-001X
Work Order: LD4G7
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 91
Thorium 228	1.25		0.25	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.16		0.24	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.09		0.23	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541

Client Sample ID: PNV-SO-SU15TP001EW(2.0-3.0)51709(DUPLICATE)

Sample Collection Date: 05/17/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01541-009

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.657	0.524	0.214	0.099		pCi/g	ARS-009/EPA 903.1	6/1/09 6:47	BJS	100%
U-234	1.164	0.275	0.093	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	70%
U-235	0.014	0.028	0.038	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	70%
U-238	1.234	0.284	0.071	0.019		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	70%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-009

Radiochemistry

Lab Sample ID: F9F010114-002
Work Order: LD4G9
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 75
Thorium 228	1.43		0.29	1.00	0.10	06/01/09	06/04/09
Thorium 230	1.60		0.30	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.19		0.25	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01541
Client Sample ID: PNV-SO-SU15TP001WW(2.5)51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01541-005
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.792	0.274	0.158	0.071		pCi/g	ARS-009/EPA 903.1	6/1/09 4:39	BJS	100%
U-234	0.365	1.093	2.375	0.693		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	2%
U-235	0.423	0.831	1.146	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	2%
U-238	0.607	1.327	2.584	0.799		pCi/g	ARS-026/EICHROMACW-03-15	6/3/09 14:18	JB	2%

NOTES: Date and Time of Shipment 05-21-09, Air Bill Number: 17 7RO 57F 23 1000 0032 Eric Schmitt

Mary Foston
Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01541-005

Radiochemistry

Lab Sample ID: F9F010113-018
Work Order: LD4G4
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 81
Thorium 228	0.75	J	0.19	1.00	0.1	06/01/09	06/05/09
Thorium 230	0.67	J	0.18	1.00	0.06	06/01/09	06/05/09
Thorium 232	0.60	J	0.17	1.00	0.05	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU15TP002-S-51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-004
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	-0.119	0.295	0.540	0.254	U	pCi/g	ARS-009/EPA 903.1	5/28/09 15:31	BJS	81%
U-234	0.516	0.151	0.061	0.018		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	87%
U-235	0.000	0.021	0.029	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	87%
U-238	0.599	0.164	0.025	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	87%

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01539-004

Radiochemistry

Lab Sample ID: F9F010113-008
Work Order: LD4GM
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 77
Thorium 228	0.54	J	0.17	1.00	0.06	06/01/09	06/04/09
Thorium 230	0.54	J	0.17	1.00	0.08	06/01/09	06/04/09
Thorium 232	0.58	J	0.17	1.00	0.03	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU15TP002BT51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-001
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.416	0.200	0.230	0.107		pCi/g	ARS-009/EPA 903.1	6/2/09 1:32	BJS	100%
U-234	1.834	0.433	0.146	0.047		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	42%
U-235	0.037	0.064	0.109	0.024		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	42%
U-238	2.387	0.510	0.112	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	42%

NOTES:

C. Bulgig

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-001

Radiochemistry

Lab Sample ID: F9F010114-012
Work Order: LD4HQ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 84
Thorium 228	1.10		0.24	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.90	J	0.21	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.06		0.23	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543

Client Sample ID: PNV-SO-SU15TP002SW(3.5-4.0)51609

Sample Collection Date: 05/16/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01543-002

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.727	0.275	0.227	0.105		pCi/g	ARS-009/EPA 903.1	6/2/09 1:32	BJS	100%
U-234	1.457	0.354	0.108	0.031		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	52%
U-235	0.064	0.078	0.112	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	52%
U-238	1.234	0.320	0.117	0.036		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	52%

NOTES:

C. Bailey

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-002

Radiochemistry

Lab Sample ID: F9F010114-013
Work Order: LD4HR
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 79
Thorium 228	0.23	J	0.11	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.01		0.23	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.30	J	0.12	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543

Client Sample ID: PNV-SO-SU15TP002NW(1.5-2.0)51609

Sample Collection Date: 05/16/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01543-004

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.161	0.380	0.179	0.081		pCi/g	ARS-009/EPA 903.1	6/2/09 2:00	BJS	100%
U-234	1.734	0.368	0.088	0.026		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	66%
U-235	0.094	0.076	0.043	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	66%
U-238	2.050	0.412	0.115	0.039		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	66%

NOTES:

C. Bulej

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-004

Radiochemistry

Lab Sample ID: F9F010114-015
Work Order: LD4HW
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152303		Yld % 84
Thorium 228	1.41		0.28	1.00	0.07	06/01/09	06/04/09
Thorium 230	1.56		0.30	1.00	0.08	06/01/09	06/04/09
Thorium 232	1.20		0.25	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU15TP002NW(1.5-2.0)51609(DUPLICATE)
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-003
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.676	0.539	0.276	0.129		pCi/g	ARS-009/EPA 903.1	6/2/09 2:00	BJS	100%
U-234	1.947	0.383	0.079	0.023		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	74%
U-235	0.023	0.040	0.069	0.015		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	74%
U-238	1.649	0.343	0.103	0.035		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	74%

NOTES:

C. Bulej

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-003

Radiochemistry

Lab Sample ID: F9F010114-014
Work Order: LD4HT
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 77
Thorium 228	1.50		0.30	1.00	0.10	06/01/09	06/04/09
Thorium 230	1.78		0.33	1.00	0.08	06/01/09	06/04/09
Thorium 232	1.10		0.25	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557

Client Sample ID: PNV-SO-SU15TP003-S-52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01557-001

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.786	0.574	0.287	0.134		pCi/g	ARS-009/ EPA 903.1	6/3/09 3:00	BJS	97%
U-234	0.925	0.268	0.155	0.057		pCi/g	ARS-026/ EICHROMACW-03-15	6/4/09 22:13	JB	46%
U-235	0.052	0.060	0.049	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/4/09 22:13	JB	46%
U-238	0.938	0.270	0.155	0.057		pCi/g	ARS-026/ EICHROMACW-03-15	6/4/09 22:13	JB	46%

NOTES:

JB

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-001

Radiochemistry

Lab Sample ID: F9F010117-008
Work Order: LD4LL
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 74
Thorium 228	0.28	J	0.13	1.00	0.1	06/01/09	06/04/09
Thorium 230	1.20		0.26	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.23	J	0.11	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557
Client Sample ID: PNV-SO-SU15TP003-BT -52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01557-003
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.925	0.312	0.104	0.042		pCi/g	ARS-009/ EPA 903.1	6/3/09 3:54	BJS	84%
U-234	1.341	0.317	0.137	0.050		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	52%
U-235	0.064	0.063	0.043	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	52%
U-238	1.715	0.370	0.137	0.050		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	52%

NOTES:

JB

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-003

Radiochemistry

Lab Sample ID: F9F010117-010
Work Order: LD4LQ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152467		Yld % 77
Thorium 228	0.84	J	0.22	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.21		0.26	1.00	0.05	06/01/09	06/04/09
Thorium 232	1.11		0.25	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557

Client Sample ID: PNV-SO-SU15TP003-NW (6.0) -52009

Sample Collection Date: 05/20/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01557-004

Date Received: 05/26/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.660	0.268	0.254	0.118		pCi/g	AGS-A-002		JB	100%
U-234	1.270	0.265	0.026	0.000		pCi/g	ASP-A-025	6/3/2009	JB	71%
U-235	0.027	0.034	0.030	0.000		pCi/g	ASP-A-025	6/3/2009	JB	71%
U-238	1.478	0.293	0.026	0.000		pCi/g	ASP-A-025	6/3/2009	JB	71%

NOTES:

C. Bulejig

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-004

Radiochemistry

Lab Sample ID: F9F010117-011
Work Order: LD4LR
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 72
Thorium 228	0.74	J	0.21	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.88	J	0.23	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.84	J	0.22	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01557	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU15TP003-SW (6.0) -52009	**ARS Sample ID:**	ARS1-09-01557-002
Sample Collection Date:	05/20/09	**Date Received:**	05/26/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.673	0.245	0.155	0.069		pCi/g	AGS-A-002		JB	100%
U-234	1.459	0.281	0.023	0.000		pCi/g	ASP-A-025	6/4/2009	JB	81%
U-235	0.040	0.039	0.027	0.000		pCi/g	ASP-A-025	6/4/2009	JB	81%
U-238	1.113	0.234	0.023	0.000		pCi/g	ASP-A-025	6/4/2009	JB	81%

NOTES:

C. Bulegy

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-002

Radiochemistry

Lab Sample ID: F9F010117-009
Work Order: LD4LM
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 67
Thorium 228	1.05		0.26	1.00	0.11	06/01/09	06/04/09
Thorium 230	0.93	J	0.24	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.98	J	0.25	1.00	0.09	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01543	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU16TP001S51809	**ARS Sample ID:**	ARS1-09-01543-018
Sample Collection Date:	05/18/09	**Date Received:**	05/22/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.115	0.361	0.145	0.065		pCi/g	ARS-009/EPA 903.1	6/2/09 15:59	BJS	77%
U-234	2.346	0.439	0.094	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	69%
U-235	0.067	0.064	0.070	0.016		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	69%
U-238	2.657	0.478	0.033	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	69%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-018

Radiochemistry

Lab Sample ID: F9F010115-009
Work Order: LD4JL
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 83
Thorium 228	0.40	J	0.14	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.01		0.23	1.00	0.08	06/01/09	06/04/09
Thorium 232	0.49	J	0.15	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543

Client Sample ID: PNV-SO-SU16TP001BT51809

Sample Collection Date: 05/18/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01543-014

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.814	0.274	0.118	0.051		pCi/g	ARS-009/EPA 903.1	6/2/09 15:01	BJS	85%
U-234	2.313	0.598	0.201	0.059		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	26%
U-235	0.107	0.122	0.097	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	26%
U-238	2.401	0.626	0.345	0.131		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	26%

NOTES:

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-014

Radiochemistry

Lab Sample ID: F9F010115-005
Work Order: LD4JF
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 67
Thorium 228	1.03		0.26	1.00	0.12	06/01/09	06/04/09
Thorium 230	1.04		0.25	1.00	0.1	06/01/09	06/04/09
Thorium 232	0.92	J	0.24	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543

Client Sample ID: PNV-SO-SU16TP001WW(5.0)51809

Sample Collection Date: 05/18/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01543-015

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.676	0.267	0.250	0.117		pCi/g	ARS-009/EPA 903.1	6/2/09 15:01	BJS	100%
U-234	2.664	0.493	0.067	0.015		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	62%
U-235	0.131	0.095	0.092	0.024		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	62%
U-238	2.486	0.471	0.110	0.036		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	62%

NOTES:

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-015

Radiochemistry

Lab Sample ID: F9F010115-006
Work Order: LD4JG
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 73
Thorium 228	1.13		0.26	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.22		0.27	1.00	0.09	06/01/09	06/04/09
Thorium 232	1.28		0.28	1.00	0.09	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU16TP001NW(5.5)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-017
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.011	0.107	0.192	0.088		pCi/g	ARS-009/EPA 903.1	6/2/09 15:59	BJS	100%
U-234	1.568	0.345	0.089	0.026		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	64%
U-235	0.000	0.036	0.103	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	64%
U-238	1.806	0.379	0.097	0.030		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	64%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-017

Radiochemistry

Lab Sample ID: F9F010115-008
Work Order: LD4JK
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 77
Thorium 228	1.07		0.25	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.11		0.25	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.12		0.25	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU16TP001NW(5.5)51809(DUPLICATE)
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-016
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.576	0.205	0.124	0.055		pCi/g	ARS-009/EPA 903.1	6/2/09 15:33	BJS	98%
U-234	1.505	0.323	0.111	0.039		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	67%
U-235	0.083	0.067	0.038	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	67%
U-238	1.721	0.350	0.069	0.018		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	67%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-016

Radiochemistry

Lab Sample ID: F9F010115-007
Work Order: LD4JJ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 79
Thorium 228	1.05		0.24	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.10		0.25	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.88	J	0.22	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU16TP002-S-51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-013
Date Received: 05/20/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.275	0.161	0.208	0.095		pCi/g	ARS-009/EPA 903.1	5/26/09 13:59	BS	100%
U-234	0.847	0.207	0.057	0.015		pCi/g	ARS-026/Eichrom ACW-03-15	5/30/09 10:21	JB	79%
U-235	0.068	0.055	0.031	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/30/09 10:21	JB	79%
U-238	0.913	0.216	0.057	0.015		pCi/g	ARS-026/Eichrom ACW-03-15	5/30/09 10:21	JB	79%
TH-228	0.196	0.107	0.088	0.026		pCi/g	ARS-031/Eichrom ACW-10	6/10/09 2:08	JB	38%
TH-230	0.468	0.167	0.106	0.036		pCi/g	ARS-031/Eichrom ACW-10	6/10/09 2:08	JB	38%
TH-232	0.202	0.111	0.106	0.036		pCi/g	ARS-031/Eichrom ACW-10	6/10/09 2:08	JB	38%

NOTES:

VJM

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU16TP002-BT-51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-015
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.577	0.300	0.367	0.169		pCi/g	ARS-009/EPA 903.1	05/27/09 02:37	BS	57%
TH-228	0.808	0.180	0.163	0.075		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	53%
TH-230	1.461	0.240	0.036	0.011		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	53%
TH-232	0.880	0.168	0.068	0.028		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	53%
U-234	0.900	0.227	0.102	0.036		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	79%
U-235	0.004	0.028	0.074	0.020	U	pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	79%
U-238	1.234	0.273	0.054	0.012		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	79%

NOTES:

JB
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01502
Client Sample ID: PNV-SO-SU16TP002-NW (5.5-6.0) 51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01502-016
Date Received: 05/20/09
Report Date: 07/18/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.713	0.255	0.148	0.065		pCi/g	ARS-009/EPA 903.1	05/27/09 02:37	BS	95%
TH-228	0.730	0.156	0.134	0.062		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	70%
TH-230	1.267	0.206	0.010	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	70%
TH-232	0.824	0.149	0.010	0.000		pCi/g	ARS-029/Eichrom ACW-03-13	06/06/09 06:55	JB	70%
U-234	0.871	0.280	0.146	0.047		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	41%
U-235	0.045	0.062	0.060	0.000	U	pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	41%
U-238	0.793	0.262	0.111	0.030		pCi/g	ARS-029/Eichrom ACW-03-13	05/30/09 10:21	JB	41%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU16TP002WW(6.0)51809
Sample Collection Date: 05/18/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-007
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.099	0.205	0.350	0.163		pCi/g	AGS-A-002			
U-234	0.287	0.138	0.098	0.029		pCi/g	ASP-A-025	6/4/2009	JB	51%
U-235	0.017	0.034	0.047	0.000		pCi/g	ASP-A-025	6/4/2009	JB	51%
U-238	0.301	0.157	0.169	0.064		pCi/g	ASP-A-025	6/4/2009	JB	51%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-007

Radiochemistry

Lab Sample ID: F9F010116-007
Work Order: LD4KF
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152380		Yld % 77
Thorium 228	0.70	J	0.20	1.00	0.12	06/01/09	06/04/09
Thorium 230	0.94	J	0.23	1.00	0.09	06/01/09	06/04/09
Thorium 232	0.55	J	0.17	1.00	0.09	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554
Client Sample ID: PNV-SO-SU18TP001S52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01554-011
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.392	0.461	0.151	0.063		pCi/g	AGS-A-002		BS	100%
TH-228	0.660	0.180	0.090	0.045		pCi/g	ASP-A-009	6/4/2009	N/A	88%
TH-230	0.640	0.180	0.080	0.040		pCi/g	ASP-A-009	6/4/2009	N/A	88%
TH-232	0.610	0.170	0.060	0.030		pCi/g	ASP-A-009	6/4/2009	N/A	88%
U-234	0.231	0.107	0.033	0.000		pCi/g	ASP-A-025	6/4/2009	JB	59%
U-235	0.014	0.027	0.038	0.000		pCi/g	ASP-A-025	6/4/2009	JB	59%
U-238	0.206	0.101	0.033	0.000		pCi/g	ASP-A-025	6/4/2009	JB	59%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-011

Radiochemistry

Lab Sample ID: F9F010117-002
Work Order: LD4LE
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152467		Yld % 88
Thorium 228	0.66	J	0.18	1.00	0.09	06/01/09	06/04/09
Thorium 230	0.64	J	0.18	1.00	0.08	06/01/09	06/04/09
Thorium 232	0.61	J	0.17	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554
Client Sample ID: PNV-SO-SU18TP001BT52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01554-010
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.472	0.207	0.163	0.068		pCi/g	AGS-A-002		BS	74%
TH-228	0.980	0.250	0.100	0.050		pCi/g	ASP-A-009	6/4/2009	N/A	
TH-230	0.730	0.210	0.100	0.050		pCi/g	ASP-A-009	6/4/2009	N/A	
TH-232	0.790	0.220	0.090	0.045		pCi/g	ASP-A-009	6/4/2009	N/A	
U-234	0.522	0.190	0.142	0.052		pCi/g	ASP-A-025	6/4/2009	JB	50%
U-235	0.016	0.032	0.045	0.000		pCi/g	ASP-A-025	6/4/2009	JB	50%
U-238	0.393	0.166	0.142	0.052		pCi/g	ASP-A-025	6/4/2009	JB	50%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-010

Radiochemistry

Lab Sample ID: F9F010117-001
Work Order: LD4LD
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 70
Thorium 228	0.98	J	0.25	1.00	0.1	06/01/09	06/04/09
Thorium 230	0.73	J	0.21	1.00	0.10	06/01/09	06/04/09
Thorium 232	0.79	J	0.22	1.00	0.09	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-010 DUP

Radiochemistry

Lab Sample ID: F9F010117-001X
Work Order: LD4LD
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 73
Thorium 228	1.14		0.26	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.89	J	0.23	1.00	0.08	06/01/09	06/04/09
Thorium 232	0.99	J	0.24	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554
Client Sample ID: PNV-SO-SU18TP001NW(5.5)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01554-009
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.456	0.259	0.329	0.151		pCi/g	AGS-A-002		BS	100%
TH-228	0.870	0.220	0.090	0.045		pCi/g	ASP-A-009	6/4/2009	N/A	82%
TH-230	1.000	0.230	0.050	0.025		pCi/g	ASP-A-009	6/4/2009	N/A	82%
TH-232	0.630	0.180	0.058	0.029		pCi/g	ASP-A-009	6/4/2009	N/A	82%
U-234	0.531	0.214	0.055	0.000		pCi/g	ASP-A-025	6/4/2009	JB	36%
U-235	0.047	0.066	0.064	0.000		pCi/g	ASP-A-025	6/4/2009	JB	36%
U-238	0.530	0.214	0.055	0.000		pCi/g	ASP-A-025	6/4/2009	JB	36%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-009

Radiochemistry

Lab Sample ID: F9F010116-020
Work Order: LD4K4
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 82
Thorium 228	0.87	J	0.22	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.0	J	0.23	1.00	0.05	06/01/09	06/04/09
Thorium 232	0.63	J	0.18	1.00	0.05	06/01/09	06/04/09

NOTE(S)

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MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01554
Client Sample ID: PNV-SO-SU18TP001SW(5.0)512009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01554-008
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.485	0.487	0.157	0.066		pCi/g	AGS-A-002		BS	100%
TH-228	0.860	0.220	0.100	0.050		pCi/g	ASP-A-009	6/4/2009	N/A	77%
TH-230	0.990	0.230	0.060	0.030		pCi/g	ASP-A-009	6/4/2009	N/A	77%
TH-232	0.740	0.200	0.080	0.040		pCi/g	ASP-A-009	6/4/2009	N/A	77%
U-234	0.581	0.232	0.159	0.052		pCi/g	ASP-A-025	6/4/2009	JB	33%
U-235	0.047	0.065	0.063	0.000		pCi/g	ASP-A-025	6/4/2009	JB	33%
U-238	0.441	0.202	0.159	0.052		pCi/g	ASP-A-025	6/4/2009	JB	33%

NOTES: Air Bill Number 12 7R0 57F 23 1000 0112 Eric Shcmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01554-008

Radiochemistry

Lab Sample ID: F9F010116-019
Work Order: LD4K3
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152380		Yld % 77
Thorium 228	0.86	J	0.22	1.00	0.1	06/01/09	06/04/09
Thorium 230	0.99	J	0.23	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.74	J	0.20	1.00	0.08	06/01/09	06/04/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557
Client Sample ID: PNV-SO-SU18TP002BT -52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01557-007
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	2.465	0.812	0.289	0.123		pCi/g	ARS-009/ EPA 903.1	6/3/09 6:08	BJS	41%
U-234	0.700	0.196	0.108	0.039		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	63%
U-235	0.092	0.068	0.034	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	63%
U-238	0.324	0.122	0.029	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	63%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-007

Radiochemistry

Lab Sample ID: F9F010117-014
Work Order: LD4LW
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 80
Thorium 228	1.05		0.24	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.16		0.25	1.00	0.08	06/01/09	06/04/09
Thorium 232	0.86	J	0.21	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557
Client Sample ID: PNV-SO-SU18TP002EW(5.5)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01557-005
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.471	0.185	0.124	0.053		pCi/g	AGS-A-002		JB	100%
U-234	1.098	0.253	0.085	0.028		pCi/g	ASP-A-025	6/3/2009	JB	67%
U-235	0.075	0.061	0.034	0.000		pCi/g	ASP-A-025	6/3/2009	JB	67%
U-238	1.036	0.248	0.121	0.046		pCi/g	ASP-A-025	6/3/2009	JB	67%

NOTES:

C. Bulegin
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-005

Radiochemistry

Lab Sample ID: F9F010117-012
Work Order: LD4LT
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 59
Thorium 228	1.05		0.28	1.00	0.13	06/01/09	06/04/09
Thorium 230	1.04		0.27	1.00	0.10	06/01/09	06/04/09
Thorium 232	1.18		0.29	1.00	0.09	06/01/09	06/04/09

NOTE(S)

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01557
Client Sample ID: PNV-SO-SU18TP002WW(6.0)52009
Sample Collection Date: 05/20/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01557-006
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.457	0.215	0.238	0.109		pCi/g	ARS-009/ EPA 903.1	6/3/09 6:08	BJS	93%
U-234	1.091	0.291	0.150	0.055		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	45%
U-235	0.072	0.070	0.047	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	45%
U-238	1.122	0.288	0.041	0.000		pCi/g	ARS-026/ EICHROMACW-03-15	6/3/09 20:18	JB	45%

NOTES:

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01557-006

Radiochemistry

Lab Sample ID: F9F010117-013
Work Order: LD4LV
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152467	Yld % 79
Thorium 228	0.91	J	0.22	1.00	0.06	06/01/09	06/04/09
Thorium 230	1.17		0.26	1.00	0.07	06/01/09	06/04/09
Thorium 232	1.0	J	0.23	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU19TP001-S-51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01538-007
Date Received: 05/22/09
Report Date: 06/17/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.082	0.192	0.332	0.154		pCi/g	ARS-09/EPA 903.1	5/29/09 21:52	BJS	52%
U-234	0.359	0.132	0.071	0.021		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	82%
U-235	0.013	0.025	0.034	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	82%
U-238	0.377	0.139	0.093	0.032		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	82%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-007

Radiochemistry

Lab Sample ID: F9F010113-001
Work Order: LD4F9
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso. THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152263		Yld % 79
Thorium 228	0.52	J	0.16	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.43	J	0.15	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.54	J	0.17	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-007 DUP

Radiochemistry

Lab Sample ID: F9F010113-001X
Work Order: LD4F9
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 76
Thorium 228	0.53	J	0.17	1.00	0.1	06/01/09	06/04/09
Thorium 230	0.59	J	0.18	1.00	0.09	06/01/09	06/04/09
Thorium 232	0.55	J	0.17	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU19TP001-BT51509
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01538-010
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.311	0.257	0.389	0.181		pCi/g	AGS-A-002		TL	90%
U-234	0.535	0.170	0.076	0.022		pCi/g	ASP-A-025	6/7/2009	JB	68%
U-235	0.022	0.039	0.066	0.015		pCi/g	ASP-A-025	6/7/2009	JB	68%
U-238	0.329	0.129	0.067	0.018		pCi/g	ASP-A-025	6/7/2009	JB	68%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-010

Radiochemistry

Lab Sample ID: F9F010113-004
Work Order: LD4GF
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 93
Thorium 228	0.71	J	0.18	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.76	J	0.19	1.00	0.05	06/01/09	06/04/09
Thorium 232	0.62	J	0.17	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU19TP001-EW(6.0)51509PB5-21-09
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01538-008
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.951	0.360	0.272	0.123		pCi/g	AGS-A-002		TL	84%
U-234	0.317	0.154	0.101	0.027		pCi/g	ASP-A-025	6/7/2009	JB	46%
U-235	0.000	0.039	0.054	0.000		pCi/g	ASP-A-025	6/7/2009	JB	46%
U-238	0.380	0.174	0.140	0.046		pCi/g	ASP-A-025	6/7/2009	JB	46%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-008

Radiochemistry

Lab Sample ID: F9F010113-002
Work Order: LD4GD
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152263	Yld % 86
Thorium 228	0.98	J	0.22	1.00	0.07	06/01/09	06/04/09
Thorium 230	0.70	J	0.18	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.82	J	0.20	1.00	0.03	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538

Client Sample ID: PNV-SO-SU19TO001-WW(5.0)51909

Sample Collection Date: 05/19/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01538-009

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.196	0.207	0.330	0.153		pCi/g	AGS-A-002		TL	100%
U-234	0.263	0.127	0.083	0.022		pCi/g	ASP-A-025	6/7/2009	JB	56%
U-235	-0.006	0.011	0.082	0.018		pCi/g	ASP-A-025	6/7/2009	JB	56%
U-238	0.396	0.156	0.070	0.016		pCi/g	ASP-A-025	6/7/2009	JB	56%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-009

Radiochemistry

Lab Sample ID: F9F010113-003
Work Order: LD4GE
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152263		Yld % 79
Thorium 228	0.78	J	0.21	1.00	0.10	06/01/09	06/04/09
Thorium 230	1.0	J	0.24	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.87	J	0.22	1.00	0.07	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01572
Client Sample ID: PNV-SO-SU19TP002S(0.0-0.5)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01572-001
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.879	0.343	0.305	0.142		pCi/g	ARS-009/EPA 903.1	6/8/09 15:40	BJS	73%

NOTES: CONTRACT #W912P4-07-D-0009/METHOD OF SHIPMENT:NEXT DAY AIR/DATE & TIME OF SHIPMENT: 5-20-09/COURIER:UPS/AIR BILL NUMBER:1Z 7RO 57F 56 1000 0023/SAMPLERS NAME:ERIC SCHMITT.

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01572
Client Sample ID: PNV-SO-SU19TP002S(0.0-0.5)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01572-001
Date Received: 05/21/09
Report Date: 06/11/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.290	0.128	0.090	0.028		pCi/g	ARS-026/Eichrom ACW-03-15	6/9/09 1:42	JB	56%
U-235	-0.015	0.050	0.137	0.048	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/9/09 1:42	JB	56%
U-238	0.247	0.119	0.093	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	6/9/09 1:42	JB	56%

NOTES: CONTRACT #W912P4-07-D-0009/METHOD OF SHIPMENT:NEXT DAY AIR/DATE & TIME OF SHIPMENT: 5-20-09/COURIER:UPS/AIR BILL NUMBER:1Z 7RO 57F 56 1000 0023/SAMPLERS NAME:ERIC SCHMITT.

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01572
Client Sample ID: PNV-SO-SU19TP002S(0.0-0.5)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01572-001
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.362	0.242	0.311	0.120		pCi/g	ARS-026/EICHROMACW-03-15	6/8/09 2:13	JB	31%
TH-230	0.601	0.279	0.271	0.101		pCi/g	ARS-026/EICHROMACW-03-15	6/8/09 2:13	JB	31%
TH-232	0.251	0.199	0.271	0.101		pCi/g	ARS-026/EICHROMACW-03-15	6/8/09 2:13	JB	31%

NOTES: CONTRACT #W912P4-07-D-0009/METHOD OF SHIPMENT:NEXT DAY AIR/DATE & TIME OF SHIPMENT: 5-20-09/COURIER:UPS/AIR BILL NUMBER:1Z 7RO 57F 56 1000 0023/SAMPLERS NAME:ERIC SCHMITT.

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU-19TP002BT51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-005
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.395	0.151	0.112	0.040		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	58%
U-235	0.014	0.027	0.038	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	58%
U-238	0.356	0.139	0.088	0.028		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	58%
RA-226	0.285	0.151	0.185	0.085		pCi/g	ARS-009/EPA 903.1	5/27/09 23:33	BJS	100%
TH-228	0.891	0.26	0.08	0.018		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	55%
TH-230	0.797	0.246	0.129	0.043		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	55%
TH-232	0.662	0.217	0.078	0.017		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	55%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulezig
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU19TP002WW(5.0-5.5)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-004
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.595	0.175	0.079	0.025		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	68%
U-235	0.012	0.024	0.034	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	68%
U-238	0.354	0.128	0.029	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	68%
RA-226	0.331	0.183	0.237	0.111		pCi/g	ARS-009/EPA 903.1	5/27/09 22:35	BJS	100%
TH-228	0.982	0.252	0.064	0.014		pCi/g	ARS-026/Eichrom ACW-10	6/8/09 9:37	JB	63%
TH-230	0.833	0.229	0.102	0.034		pCi/g	ARS-026/Eichrom ACW-10	6/8/09 9:37	JB	63%
TH-232	0.731	0.21	0.082	0.024		pCi/g	ARS-026/Eichrom ACW-10	6/8/09 9:37	JB	63%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulegrz
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU19TP002NW(4.5-5.5)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-006
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.444	0.160	0.093	0.029		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	59%
U-235	0.015	0.049	0.107	0.034		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	59%
U-238	0.627	0.190	0.034	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	59%
RA-226	0.642	0.231	0.141	0.062		pCi/g	ARS-009/EPA 903.1	5/28/09 0:15	BJS	73%
TH-228	0.753	0.198	0.061	0.016		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	78%
TH-230	0.681	0.186	0.078	0.025		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	78%
TH-232	0.431	0.142	0.067	0.019		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:37	JB	78%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulegin

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU19TP003S551709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-010
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.489	0.204	0.196	0.090		pCi/g	ARS-009/EPA 903.1	6/209 06:27	BJS	79%
U-234	1.287	0.304	0.088	0.026		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	62%
U-235	0.063	0.062	0.043	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	62%
U-238	1.393	0.317	0.037	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	62%

NOTES:

C. Bulgy

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-010

Radiochemistry

Lab Sample ID: F9F010115-001
Work Order: LD4JA
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152391		Yld % 88
Thorium 228	0.27	J	0.11	1.00	0.07	06/01/09	06/04/09
Thorium 230	0.60	J	0.17	1.00	0.05	06/01/09	06/04/09
Thorium 232	0.38	J	0.13	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-010 DUP

Radiochemistry

Lab Sample ID: F9F010115-001X
Work Order: LD4JA
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 90
Thorium 228	0.31	J	0.12	1.00	0.08	06/01/09	06/04/09
Thorium 230	0.49	J	0.15	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.37	J	0.13	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU19TP003BT51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-013
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.187	0.142	0.210	0.097		pCi/g	ARS-009/EPA 903.1	6/2/09 14:34	BJS	77%
U-234	1.772	0.367	0.091	0.028		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	63%
U-235	0.040	0.052	0.073	0.016		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	63%
U-238	1.661	0.352	0.098	0.032		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	63%

NOTES:

C. Bulegy
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-013

Radiochemistry

Lab Sample ID: F9F010115-004
Work Order: LD4JE
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152391	Yld % 75
Thorium 228	1.01		0.24	1.00	0.1	06/01/09	06/04/09
Thorium 230	0.80	J	0.21	1.00	0.06	06/01/09	06/04/09
Thorium 232	1.22		0.26	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU19TP003WW(4.5)51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01543-011
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.141	0.422	0.326	0.150		pCi/g	ARS-009/EPA 903.1	06/02/09 03:35	JB	57%
U-234	1.846	0.481	0.226	0.080		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	36%
U-235	0.122	0.127	0.164	0.044	U	pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	36%
U-238	1.688	0.447	0.119	0.027		pCi/g	ARS-029/Eichrom ACW-03-13	06/02/09 08:52	JB	36%

NOTES:

JB

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01572
Client Sample ID: PNV-SO-SU19-TP003-WW(4.5)51709 (Split)
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01572-005
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.658	0.254	0.178	0.078		pCi/g	ARS-009/EPA 903.1	06/08/09 16:45	BJS	100%
U-234	0.553	0.227	0.199	0.074		pCi/g	ARS-026/Eichrom ACW-03-15	06/09/09 01:42	JB	41%
U-235	0.043	0.059	0.058	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	06/09/09 01:42	JB	41%
U-238	0.378	0.178	0.139	0.045		pCi/g	ARS-026/Eichrom ACW-03-15	06/09/09 01:42	JB	41%
TH-228	0.766	0.240	0.193	0.078		pCi/g	ARS-031/Eichrom ACW-10	06/08/09 12:25	JB	53%
TH-230	0.820	0.234	0.124	0.044		pCi/g	ARS-031/Eichrom ACW-10	06/08/09 12:25	JB	53%
TH-232	0.758	0.217	0.036	0.000		pCi/g	ARS-031/Eichrom ACW-10	06/08/09 12:25	JB	53%

NOTES: CONTRACT #W912P4-07-D-0009/METHOD OF SHIPMENT:NEXT DAY AIR/DATE & TIME OF SHIPMENT: 5-20-09/COURIER:UPS/AIR BILL NUMBER:1Z 7RO 57F 56 1000 0023/SAMPLERS NAME:ERIC SCHMITT.

JB

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU19TP003NW(5.0)51709
Sample Collection Date: 05/17/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-012
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.543	0.220	0.209	0.097		pCi/g	ARS-009/EPA 903.1	6/2/09 14:34	BJS	92%
U-234	1.812	0.416	0.134	0.043		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	47%
U-235	0.061	0.069	0.055	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	47%
U-238	1.984	0.438	0.102	0.027		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:53	JB	47%

NOTES:

C. Bailey
Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-012

Radiochemistry

Lab Sample ID: F9F010115-003
Work Order: LD4JD
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152391		Yld % 78
Thorium 228	1.10		0.25	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.15		0.25	1.00	0.08	06/01/09	06/04/09
Thorium 232	1.04		0.24	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01553
Client Sample ID: PNV-SO-SU19TP004-S-51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01553-008
Date Received: 05/26/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.387	0.475	0.258	0.116		pCi/g	AGS-A-002			
U-234	0.656	0.247	0.105	0.023		pCi/g	ASP-A-025	6/4/2009	JB	39%
U-235	0.083	0.100	0.144	0.038		pCi/g	ASP-A-025	6/4/2009	JB	39%
U-238	0.470	0.215	0.173	0.057		pCi/g	ASP-A-025	6/4/2009	JB	39%

NOTES: Air Bill Number: 12 7RO 57F 23 1000 0149, Eric Schmitt

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01553-008

Radiochemistry

Lab Sample ID: F9F010116-008
Work Order: LD4KG
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152380	Yld % 83
Thorium 228	0.39	J	0.14	1.00	0.09	06/01/09	06/04/09
Thorium 230	1.30		0.27	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.42	J	0.14	1.00	0.07	06/01/09	06/04/09

NOTE(S)

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MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU20TP001-S-51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01538-001
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	2.000	0.767	0.663	0.308		pCi/g	AGS-A-002		TL	51%
U-234	0.226	0.108	0.093	0.032		pCi/g	ASP-A-025	6/7/2009	JB	73%
U-235	0.008	0.039	0.090	0.028		pCi/g	ASP-A-025	6/7/2009	JB	73%
U-238	0.196	0.097	0.071	0.021		pCi/g	ASP-A-025	6/7/2009	JB	73%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-001

Radiochemistry

Lab Sample ID: F9F010125-004
Work Order: LD4RG
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152541	Yld % 85
Thorium 228	0.82	J	0.21	1.00	0.08	06/01/09	06/05/09
Thorium 230	1.26		0.26	1.00	0.07	06/01/09	06/05/09
Thorium 232	0.79	J	0.20	1.00	0.07	06/01/09	06/05/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU20TP001-BT51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01538-006
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.354	0.270	0.402	0.189		pCi/g	AGS-A-002		TL	95%
U-234	1.568	0.363	0.102	0.030		pCi/g	ASP-A-025	6/7/2009	JB	55%
U-235	0.048	0.063	0.089	0.020		pCi/g	ASP-A-025	6/7/2009	JB	55%
U-238	1.278	0.322	0.133	0.045		pCi/g	ASP-A-025	6/7/2009	JB	55%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-006

Radiochemistry

Lab Sample ID: F9F010125-009
Work Order: LD4RM
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152541	Yld % 87
Thorium 228	1.07		0.24	1.00	0.07	06/01/09	06/05/09
Thorium 230	1.17		0.25	1.00	0.05	06/01/09	06/05/09
Thorium 232	0.98	J	0.22	1.00	0.06	06/01/09	06/05/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538

Client Sample ID: PNV-SO-SU20TP001-NW(5.0)51909

Sample Collection Date: 05/19/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01538-004

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.165	0.145	0.220	0.100		pCi/g	AGS-A-002		TL	100%
U-234	0.732	0.214	0.099	0.032		pCi/g	ASP-A-025	6/7/2009	JB	61%
U-235	0.040	0.052	0.074	0.017		pCi/g	ASP-A-025	6/7/2009	JB	61%
U-238	0.471	0.165	0.075	0.020		pCi/g	ASP-A-025	6/7/2009	JB	61%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-004

Radiochemistry

Lab Sample ID: F9F010125-007
Work Order: LD4RK
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152541	Yld % 85
Thorium 228	0.69	J	0.19	1.00	0.09	06/01/09	06/05/09
Thorium 230	0.86	J	0.21	1.00	0.05	06/01/09	06/05/09
Thorium 232	0.93	J	0.22	1.00	0.07	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group:	ARS1-09-01538	**Request or PO Number:**	
Client Sample ID:	PNV-SO-SU20TP001-NW(5.0)51909(DUPLICATE)	**ARS Sample ID:**	ARS1-09-01538-002
Sample Collection Date:	05/19/09	**Date Received:**	05/22/09
Sample Matrix:	Soil/Solid	**Report Date:**	06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.665	0.275	0.239	0.107		pCi/g	AGS-A-002		TL	100%
U-234	0.449	0.159	0.081	0.024		pCi/g	ASP-A-025	6/7/2009	JB	68%
U-235	0.024	0.041	0.071	0.016		pCi/g	ASP-A-025	6/7/2009	JB	68%
U-238	0.324	0.145	0.140	0.053		pCi/g	ASP-A-025	6/7/2009	JB	68%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-002

Radiochemistry

Lab Sample ID: F9F010125-005
Work Order: LD4RH
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152541	Yld % 85
Thorium 228	0.85	J	0.21	1.00	0.09	06/01/09	06/05/09
Thorium 230	0.75	J	0.19	1.00	0.06	06/01/09	06/05/09
Thorium 232	0.89	J	0.21	1.00	0.07	06/01/09	06/05/09

NOTE(S)

Data are incomplete without the case narrative.

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU20TP001-WW(5.0)51909
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01538-005
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.048	0.526	0.615	0.282		pCi/g	AGS-A-002		TL	54%
U-234	0.984	0.246	0.078	0.023		pCi/g	ASP-A-025	6/7/2009	JB	69%
U-235	0.019	0.041	0.081	0.022		pCi/g	ASP-A-025	6/7/2009	JB	69%
U-238	0.691	0.199	0.085	0.026		pCi/g	ASP-A-025	6/7/2009	JB	69%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-005

Radiochemistry

Lab Sample ID: F9F010125-008
Work Order: LD4RL
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152541		Yld % 81
Thorium 228	0.82	J	0.21	1.00	0.09	06/01/09	06/05/09
Thorium 230	0.95	J	0.23	1.00	0.05	06/01/09	06/05/09
Thorium 232	0.80	J	0.21	1.00	0.05	06/01/09	06/05/09

NOTE(S)

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01538
Client Sample ID: PNV-SO-SU20TP001-WW(5.0)51909(DUPLICATE)
Sample Collection Date: 05/19/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01538-003
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	1.014	0.368	0.237	0.106		pCi/g	AGS-A-002		TL	90%
U-234	0.467	0.154	0.078	0.024		pCi/g	ASP-A-025	6/7/2009	JB	81%
U-235	0.013	0.025	0.034	0.000		pCi/g	ASP-A-025	6/7/2009	JB	81%
U-238	0.451	0.151	0.083	0.027		pCi/g	ASP-A-025	6/7/2009	JB	81%

NOTES: 12 7RO 57F 23 1000 0130 Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01538-003

Radiochemistry

Lab Sample ID: F9F010125-006
Work Order: LD4RJ
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152541		Yld % 86
Thorium 228	1.02		0.23	1.00	0.08	06/01/09	06/05/09
Thorium 230	0.88	J	0.21	1.00	0.05	06/01/09	06/05/09
Thorium 232	0.89	J	0.21	1.00	0.06	06/01/09	06/05/09

NOTE(S)

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU20TP002(0.0-0.5)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-005
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.733	0.266	0.188	0.086		pCi/g	ARS-009/EPA 903.1	6/2/09 3:09	BJS	100%
U-234	1.448	0.338	0.086	0.023		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	54%
U-235	0.034	0.048	0.047	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	54%
U-238	1.470	0.343	0.120	0.040		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	54%

NOTES:

C. Bulging
Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-005

Radiochemistry

Lab Sample ID: F9F010114-016
Work Order: LD4HX
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152303		Yld % 90
Thorium 228	0.51	J	0.15	1.00	0.07	06/01/09	06/04/09
Thorium 230	0.92	J	0.21	1.00	0.05	06/01/09	06/04/09
Thorium 232	0.45	J	0.14	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

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Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU20TP002BT51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-008
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.860	0.313	0.248	0.116		pCi/g	ARS-009/EPA 903.1	6/2/09 4:22	BJS	88%
U-234	1.733	0.380	0.097	0.028		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	55%
U-235	0.087	0.077	0.047	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	55%
U-238	1.590	0.360	0.106	0.033		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	55%

NOTES:

C. Bulezij
Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-008

Radiochemistry

Lab Sample ID: F9F010114-019
Work Order: LD4H5
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152303		Yld % 93
Thorium 228	0.96	J	0.22	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.11		0.23	1.00	0.08	06/01/09	06/04/09
Thorium 232	1.03		0.22	1.00	0.06	06/01/09	06/04/09

NOTE(S)

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J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU20TP002NW(5.5-6.0)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-009
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.381	0.198	0.248	0.117		pCi/g	ARS-009/EPA 903.1	6/2/09 5:58	BJS	88%
U-234	1.833	0.373	0.106	0.036		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	67%
U-235	0.101	0.076	0.039	0.000		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	67%
U-238	1.921	0.383	0.081	0.024		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	67%

NOTES:

C. Bailey
Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-009

Radiochemistry

Lab Sample ID: F9F010114-020
Work Order: LD4H6
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 9152303	Yld % 87
Thorium 228	1.03		0.23	1.00	0.09	06/01/09	06/04/09
Thorium 230	0.93	J	0.22	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.69	J	0.18	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543
Client Sample ID: PNV-SO-SU20TP002WW(3.5-4.0)51509
Sample Collection Date: 05/15/09
Sample Matrix: Soil/Solid

Request or PO Number:
ARS Sample ID: ARS1-09-01543-007
Date Received: 05/22/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.471	0.179	0.124	0.055		pCi/g	ARS-009/EPA 903.1	6/2/09 3:44	BJS	100%
U-234	1.546	0.328	0.097	0.032		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	65%
U-235	0.032	0.049	0.081	0.022		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	65%
U-238	1.738	0.353	0.069	0.019		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	65%

NOTES:

C. Bailey

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-007

Radiochemistry

Lab Sample ID: F9F010114-018
Work Order: LD4H2
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152303		Yld % 90
Thorium 228	0.82	J	0.20	1.00	0.08	06/01/09	06/04/09
Thorium 230	1.08		0.23	1.00	0.07	06/01/09	06/04/09
Thorium 232	0.86	J	0.20	1.00	0.06	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01543

Client Sample ID: PNV-SO-SU20TP002WW(3.5-4.0)51509(DUPLICATE)

Sample Collection Date: 05/15/09

Sample Matrix: Soil/Solid

Request or PO Number:

ARS Sample ID: ARS1-09-01543-006

Date Received: 05/22/09

Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.417	0.214	0.266	0.124		pCi/g	ARS-009/EPA 903.1	6/2/09 3:37	BJS	100%
U-234	1.237	0.457	0.222	0.059		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	21%
U-235	0.074	0.127	0.218	0.049		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	21%
U-238	1.630	0.530	0.187	0.042		pCi/g	ARS-026/EICHROMACW-03-15	6/2/09 8:52	JB	21%

NOTES:

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01543-006

Radiochemistry

Lab Sample ID: F9F010114-017
Work Order: LD4H0
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152303		Yld % 88
Thorium 228	1.17		0.24	1.00	0.07	06/01/09	06/04/09
Thorium 230	1.14		0.24	1.00	0.06	06/01/09	06/04/09
Thorium 232	0.98	J	0.22	1.00	0.05	06/01/09	06/04/09

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01539
Client Sample ID: PNV-SO-SU21TP001-S-51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01539-002
Date Received: 05/22/09
Report Date: 06/12/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.957	0.532	0.668	0.301		pCi/g	ARS-009/EPA 903.1	5/28/09 15:30	BJS	52%
U-234	0.450	0.147	0.068	0.020		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	76%
U-235	0.000	0.024	0.033	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	76%
U-238	0.529	0.162	0.074	0.023		pCi/g	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	76%

NOTES: 12 7RO 57f 23 1000 0121 Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

American Radiation Services, Inc.

Client Sample ID: ARS1-09-01539-002

Radiochemistry

Lab Sample ID: F9F010113-006
Work Order: LD4GK
Matrix: SOLID

Date Collected: 05/29/09 1858
Date Received: 05/30/09 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		Batch # 9152263		Yld % 46
Thorium 228	0.039	U	0.093	1.00	0.18	06/01/09	06/04/09
Thorium 230	0.48	J	0.20	1.00	0.11	06/01/09	06/04/09
Thorium 232	0.032	U	0.056	1.00	0.096	06/01/09	06/04/09

NOTE(S)

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MDC is determined by instrument performance only.
Bold results are greater than the MDC.

J Result is greater than sample detection limit but less than stated reporting limit.
U Result is less than the sample detection limit.

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU21TP001BT51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-013
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.394	0.326	0.094	0.027		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	59%
U-235	0.100	0.081	0.045	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	59%
U-238	1.692	0.375	0.161	0.061		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	59%
RA-226	1.659	0.548	0.224	0.099		pCi/g	ARS-009/EPA 903.1	5/28/09 2:45	BJS	100%
TH-228	0.573	0.423	0.366	0.082		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	11%
TH-230	0.752	0.486	0.423	0.113		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	11%
TH-232	0.895	0.528	0.422	0.113		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	11%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

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ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-09-01530
Client Sample ID: PNV-SO-SU21TP001SW(3.0-4.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01530-001
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
RA-226	0.369	0.194	0.218	0.096		pCi/g	ARS-009/EPA 903.1	5/28/09 14:03	TL	100%

NOTES: Contract # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

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ARS Sample Delivery Group: ARS1-09-01530
Client Sample ID: PNV-SO-SU21TP001SW(3.0-4.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01530-001
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.525	0.156	0.072	0.023	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	66%
U-235	0.023	0.031	0.031	0.000	U	pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	66%
U-238	0.220	0.094	0.026	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JB	66%

NOTES: Contract # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

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Project Manager Review

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ARS Sample Delivery Group: ARS1-09-01530
Client Sample ID: PNV-SO-SU21TP001SW(3.0-4.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01530-001
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
TH-228	0.531	0.165	0.055	0.012	U	pCi/g	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB	77%
TH-230	0.478	0.156	0.088	0.029	U	pCi/g	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB	77%
TH-232	0.607	0.177	0.071	0.021	U	pCi/g	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB	77%

NOTES: Contract # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

C. Bulgig

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ARS INTERNATIONAL
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ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU21TP001SW(3.0-4.0)51609(DUPLICATE)
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-014
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	0.335	0.132	0.085	0.027		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	67%
U-235	0.013	0.026	0.036	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	67%
U-238	0.254	0.115	0.085	0.027		pCi/g	ARS-026/Eichrom ACW-03-15	6/8/09 2:11	JLA	67%
RA-226	0.354	0.195	0.251	0.117		pCi/g	ARS-009/EPA 903.1	5/28/09 2:45	BJS	100%
TH-228	0.571	0.223	0.128	0.037		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	45%
TH-230	0.498	0.201	0.052	0.000		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	45%
TH-232	0.574	0.221	0.125	0.036		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	45%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

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LELAP Certificate# 01949 NELAP Certificate # E87558

ARS Laboratory Radiological QA/QC Results

ARS INTERNATIONAL
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1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-09-01489
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01889	LCS	RA-226	27.554	7.854	0.104	29.725		pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL	93	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01889	MBL	RA-226	0.120	0.120	0.187	NA	U	pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01889	LCSD	RA-226	27.554	7.854	13.095	3.755		pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL	1.25	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01889	LCSD	RA-226	27.554	7.854	13.095	3.755		pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL	3.32	< 3

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ARS INTERNATIONAL

2609 North River Road, Port Allen, Louisiana 70767

1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-09-01489

Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02024	LCS	TH-230	5.85	0.9	0.2067502	5.82		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB	101	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02024	MBL	TH-228	-0.002	0.0104785	0.0265068	NA		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB
ARS1-B09-02024	MBL	TH-230	0.019	0.018963	0.0285528	NA		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB
ARS1-B09-02024	MBL	TH-232	0.004	0.0084116	0.0168675	NA		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02024	LCSD	TH-230	5.85	0.9	5.666673	0.72354		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB	0.12	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02024	LCSD	TH-230	5.85	0.9	5.666673	0.72354		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB	0.33	< 3

Project Manager Review

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LELAP Certificate# 30658 NELAP Certificate # E87558

ARS INTERNATIONAL
2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

QC Results Report

Sample Delivery Group: ARS1-09-01489
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02050	LCS	RA-226	28.754	8.221	0.153	29.214		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02050	MBL	RA-226	-0.479	0.241	0.437	NA	U	pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02050	LCSD	RA-226	28.754	8.221	27.611	7.896		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	0.07	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02050	LCSD	RA-226	28.754	8.221	27.611	7.896		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	0.20	< 3

Project Manager Review

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ARS INTERNATIONAL
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QC Results Report

Sample Delivery Group: ARS1-09-01496
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01891	LCS	RA-226	19.129	5.467	0.146	29.536		pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL	65	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01891	MBL	RA-226	-0.066	0.073	0.152	NA	U	pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01891	LCSD	RA-226	19.129	5.467	13.159	3.771		pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL	0.65	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01891	LCSD	RA-226	19.129	5.467	13.159	3.771		pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL	1.80	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01496
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01901	LCS	RA-226	27.505	7.830	0.186	29.507		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL	93	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01901	MBL	RA-226	2.266	0.692	0.218	NA		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01901	LCSD	RA-226	27.505	7.830	29.446	8.384		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL	0.12	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01901	LCSD	RA-226	27.505	7.830	29.446	8.384		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL	0.34	< 3

Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01496
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01930	LCS	U-238	16.328	2.068	0.0732334	16.791		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	97	75% 125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01930	MBL	U-234	0.089	0.548	0.0547069	NA		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01930	MBL	U-235	-0.006	0.008	0.0484	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01930	MBL	U-238	0.074	0.048	0.0416724	NA		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01930	LCSD	U-238	16.328	2.0683	17.110541	2.184639		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.18	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01930	LCSD	U-238	16.328	2.0683	17.110541	2.184639		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.52	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01496
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02050	LCS	RA-226	28.754	8.221	0.153	29.214		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02050	MBL	RA-226	-0.479	0.241	0.437	NA	U	pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02050	LCSD	RA-226	28.754	8.221	27.611	7.896		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	0.07	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02050	LCSD	RA-226	28.754	8.221	27.611	7.896		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	0.20	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01502
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01889	LCS	RA-226	27.554	7.854	0.104	29.725		pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL	93	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01889	MBL	RA-226	0.120	0.120	0.187	NA	U	pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01889	LCSD	RA-226	27.554	7.854	13.095	3.755		pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL	1.25	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01889	LCSD	RA-226	27.554	7.854	13.095	3.755		pCi/L	ARS-009/EPA 903.1	5/25/09 14:10	TL	3.32	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01502
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01891	LCS	RA-226	19.129	5.467	0.146	29.536		pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL	65	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01891	MBL	RA-226	-0.066	0.073	0.152	NA	U	pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01891	LCSD	RA-226	19.129	5.467	13.159	3.771		pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL	0.65	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01891	LCSD	RA-226	19.129	5.467	13.159	3.771		pCi/L	ARS-009/EPA 903.1	5/26/09 4:28	TL	1.80	< 3

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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01929	LCS	U-238	16.845	2.125	0.0683311	16.854		pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01929	MBL	U-234	0.002	0.017	0.0352631	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB
ARS1-B09-01929	MBL	U-235	-0.004	0.006	0.0364571	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB
ARS1-B09-01929	MBL	U-238	0.007	0.016	0.0313895	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01929	LCSD	U-238	16.845	2.1245	17.451538	2.215615		pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB	0.14	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01929	LCSD	U-238	16.845	2.1245	17.451538	2.215615		pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB	0.40	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01502
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02024	LCS	TH-230	5.85	0.9	0.2067502	5.82		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB	101	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02024	MBL	TH-228	-0.002	0.0104785	0.0265068	NA		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB
ARS1-B09-02024	MBL	TH-230	0.019	0.018963	0.0285528	NA		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB
ARS1-B09-02024	MBL	TH-232	0.004	0.0084116	0.0168675	NA		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02024	LCSD	TH-230	5.85	0.9	5.666673	0.72354		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB	0.12	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02024	LCSD	TH-230	5.85	0.9	5.666673	0.72354		pCi/L	ARS-031/Eichrom ACW-10	6/6/09 19:25	JB	0.33	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01530
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01933	LCS	RA-226	27.345	7.816	0.236	29.595		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	92	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01933	MBL	RA-226	0.052	0.159	0.283	NA	U	pCi/L	ARS-009/EPA 903.1	5/28/09 14:06	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.11	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.32	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01530
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01941	LCS	U-238	16.448	2.612	0.5341459	16.822		pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01941	MBL	U-234	-0.054	0.048	0.2458714	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES
ARS1-B09-01941	MBL	U-235	-0.025	0.035	0.2175259	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES
ARS1-B09-01941	MBL	U-238	0.011	0.070	0.1872898	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01941	LCSD	U-238	16.448	2.6118	18.893928	2.406128		pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES	0.49	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01941	LCSD	U-238	16.448	2.6118	18.893928	2.406128		pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES	1.38	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01530
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02012	LCS	U-238	17.160	2.175	0.047901	16.869		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB	102	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02012	MBL	U-234	0.025	0.022	0.013645	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB
ARS1-B09-02012	MBL	U-235	0.006	0.011	0.0158162	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB
ARS1-B09-02012	MBL	U-238	0.010	0.031	0.0602144	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02012	LCSD	U-238	17.160	2.1750	12.112636	1.524779		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB	1.36	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02012	LCSD	U-238	17.160	2.1750	12.112636	1.524779		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB	3.80	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01530
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02044	LCS	TH-230	5.18	0.7	0.0630108	5.86		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB	88	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02044	MBL	TH-228	-0.009	0.0085158	0.0459027	NA		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB
ARS1-B09-02044	MBL	TH-230	0.015	0.0269741	0.0489862	NA		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB
ARS1-B09-02044	MBL	TH-232	-0.002	0.0042027	0.0314817	NA		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02044	LCSD	TH-230	5.18	0.7	5.796359	0.782858		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB	0.42	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02044	LCSD	TH-230	5.18	0.7	5.796359	0.782858		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 23:36	JB	1.17	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01531
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01901	LCS	RA-226	27.505	7.830	0.186	29.507		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL	93	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01901	MBL	RA-226	2.266	0.692	0.218	NA		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01901	LCSD	RA-226	27.505	7.830	29.446	8.384		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL	0.12	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01901	LCSD	RA-226	27.505	7.830	29.446	8.384		pCi/L	ARS-009/EPA 903.1	5/27/09 4:03	TL	0.34	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01531
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01933	LCS	RA-226	27.345	7.816	0.236	29.595		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	92	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01933	MBL	RA-226	0.052	0.159	0.283	NA	U	pCi/L	ARS-009/EPA 903.1	5/28/09 14:06	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.11	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.32	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01531
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01941	LCS	U-238	16.448	2.612	0.5341459	16.822		pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01941	MBL	U-234	-0.054	0.048	0.2458714	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES
ARS1-B09-01941	MBL	U-235	-0.025	0.035	0.2175259	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES
ARS1-B09-01941	MBL	U-238	0.011	0.070	0.1872898	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01941	LCSD	U-238	16.448	2.6118	18.893928	2.406128		pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES	0.49	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01941	LCSD	U-238	16.448	2.6118	18.893928	2.406128		pCi/L	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	GJONES	1.38	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01531
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02012	LCS	U-238	17.160	2.175	0.047901	16.869		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB	102	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02012	MBL	U-234	0.025	0.022	0.013645	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB
ARS1-B09-02012	MBL	U-235	0.006	0.011	0.0158162	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB
ARS1-B09-02012	MBL	U-238	0.010	0.031	0.0602144	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02012	LCSD	U-238	17.160	2.1750	12.112636	1.524779		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB	1.36	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02012	LCSD	U-238	17.160	2.1750	12.112636	1.524779		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 22:10	JB	3.80	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01531
Date Received: 05/20/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02050	LCS	RA-226	28.754	8.221	0.153	29.214		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02050	MBL	RA-226	-0.479	0.241	0.437	NA	U	pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02050	LCSD	RA-226	28.754	8.221	27.611	7.896		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	0.07	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02050	LCSD	RA-226	28.754	8.221	27.611	7.896		pCi/L	ARS-009/EPA 903.1	6/6/09 16:16	BJS	0.20	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01531
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02054	LCS	TH-230	5.61	0.8	0.0825068	5.85		pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD	96	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02054	MBL	TH-228	0.004	0.0200552	0.0464285	NA	U	pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD
ARS1-B09-02054	MBL	TH-230	0.028	0.0327588	0.0494371	NA	U	pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD
ARS1-B09-02054	MBL	TH-232	0.004	0.0133971	0.0317714	NA	U	pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02054	LCSD	TH-230	5.61	0.8	-5.278875	1.372624		pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD	5.07	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02054	LCSD	TH-230	5.61	0.8	-5.278875	1.372624		pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD	13.82	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01537
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01911	LCS	RA-226	30.518	8.721	0.264	29.507		pCi/L	ARS-009/EPA 903.1	5/29/09 2:57	TL	103	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01911	MBL	RA-226	0.138	0.220	0.369	NA	U	pCi/L	ARS-009/EPA 903.1	5/29/09 2:57	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01911	LCSD	RA-226	30.518	8.721	18.803	5.401		pCi/L	ARS-009/EPA 903.1	5/29/09 2:57	TL	0.83	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01911	LCSD	RA-226	30.518	8.721	18.803	5.401		pCi/L	ARS-009/EPA 903.1	5/29/09 2:57	TL	2.28	< 3

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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01929	LCS	U-238	16.845	2.125	0.0683311	16.854		pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01929	MBL	U-234	0.002	0.017	0.0352631	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB
ARS1-B09-01929	MBL	U-235	-0.004	0.006	0.0364571	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB
ARS1-B09-01929	MBL	U-238	0.007	0.016	0.0313895	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01929	LCSD	U-238	16.845	2.1245	17.451538	2.215615		pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB	0.14	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01929	LCSD	U-238	16.845	2.1245	17.451538	2.215615		pCi/L	ARS-026/Eichrom ACW-03-15	5/30/09 0:00	JB	0.40	< 3

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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01930	LCS	U-238	16.328	2.068	0.0732334	16.791		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	97	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01930	MBL	U-234	0.089	0.548	0.0547069	NA		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01930	MBL	U-235	-0.006	0.008	0.0484	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01930	MBL	U-238	0.074	0.048	0.0416724	NA		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01930	LCSD	U-238	16.328	2.0683	17.110541	2.184639		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.18	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01930	LCSD	U-238	16.328	2.0683	17.110541	2.184639		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.52	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01537
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01942	LCS	U-238	17.292	2.178	0.0676779	16.869		pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB	103	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01942	MBL	U-234	0.002	0.018	0.0436642	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB
ARS1-B09-01942	MBL	U-235	-0.004	0.006	0.0386303	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB
ARS1-B09-01942	MBL	U-238	0.008	0.017	0.0332607	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01942	LCSD	U-238	17.292	2.1778	18.280954	2.293884		pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB	0.22	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01942	LCSD	U-238	17.292	2.1778	18.280954	2.293884		pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB	0.63	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01537
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02054	LCS	TH-230	5.61	0.8	0.0825068	5.85		pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD	96	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02054	MBL	TH-228	0.004	0.0200552	0.0464285	NA	U	pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD
ARS1-B09-02054	MBL	TH-230	0.028	0.0327588	0.0494371	NA	U	pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD
ARS1-B09-02054	MBL	TH-232	0.004	0.0133971	0.0317714	NA	U	pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02054	LCSD	TH-230	5.61	0.8	-5.278875	1.372624		pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD	5.07	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02054	LCSD	TH-230	5.61	0.8	-5.278875	1.372624		pCi/L	ARS-031/Eichrom ACW-10	6/8/09 9:37	TBYRD	13.82	< 3

Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01538
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02032	LCS	U-238	16.945	2.125	0.0589145	16.964		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02032	MBL	U-234	0.002	0.017	0.040141	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB
ARS1-B09-02032	MBL	U-235	-0.004	0.006	0.0355134	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB
ARS1-B09-02032	MBL	U-238	0.039	0.030	0.030577	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02032	LCSD	U-238	16.945	2.1247	17.872441	2.238368		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	0.21	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02032	LCSD	U-238	16.945	2.1247	17.872441	2.238368		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	0.60	< 3

C. Bulegin
Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01539
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01933	LCS	RA-226	27.345	7.816	0.236	29.595		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	92	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01933	MBL	RA-226	0.052	0.159	0.283	NA	U	pCi/L	ARS-009/EPA 903.1	5/28/09 14:06	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.11	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.32	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01539
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02032	LCS	U-238	16.945	2.125	0.0589145	16.964		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02032	MBL	U-234	0.002	0.017	0.040141	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB
ARS1-B09-02032	MBL	U-235	-0.004	0.006	0.0355134	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB
ARS1-B09-02032	MBL	U-238	0.039	0.030	0.030577	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02032	LCSD	U-238	16.945	2.1247	17.872441	2.238368		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	0.21	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02032	LCSD	U-238	16.945	2.1247	17.872441	2.238368		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	0.60	< 3

C. Bulegin
Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01540
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01926	LCS	U-238	16.746	2.113	0.0372764	16.759		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01926	MBL	U-234	0.022	0.031	0.0509673	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01926	MBL	U-235	-0.003	0.005	0.0380428	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01926	MBL	U-238	0.029	0.030	0.0388238	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01926	LCSD	U-238	16.746	2.1130	16.745529	2.112969		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.00	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01926	LCSD	U-238	16.746	2.1130	16.745529	2.112969		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.00	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01540
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01933	LCS	RA-226	27.345	7.816	0.236	29.595		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	92	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01933	MBL	RA-226	0.052	0.159	0.283	NA	U	pCi/L	ARS-009/EPA 903.1	5/28/09 14:06	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.11	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01933	LCSD	RA-226	27.345	7.816	29.157	8.338		pCi/L	ARS-009/EPA 903.1	5/28/09 13:30	TL	0.32	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01541
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01910	LCS	RA-226	29.435	8.380	0.220	29.478		pCi/L	ARS-009/EPA 903.1	6/1/09 2:57	BJS	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01910	MBL	RA-226	0.107	0.089	0.130	NA	U	pCi/L	ARS-009/EPA 903.1	6/1/09 2:57	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01910	LCSD	RA-226	29.435	8.380	28.837	8.212		pCi/L	ARS-009/EPA 903.1	6/1/09 2:57	BJS	0.04	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01910	LCSD	RA-226	29.435	8.380	28.837	8.212		pCi/L	ARS-009/EPA 903.1	6/1/09 2:57	BJS	0.10	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01541
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01926	LCS	U-238	16.746	2.113	0.0372764	16.759		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01926	MBL	U-234	0.022	0.031	0.0509673	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01926	MBL	U-235	-0.003	0.005	0.0380428	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD
ARS1-B09-01926	MBL	U-238	0.029	0.030	0.0388238	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01926	LCSD	U-238	16.746	2.1130	16.745529	2.112969		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.00	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01926	LCSD	U-238	16.746	2.1130	16.745529	2.112969		pCi/L	ARS-026/Eichrom ACW-03-15	5/29/09 8:41	TBYRD	0.00	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01542
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01971	LCS	RA-226	28.727	8.182	0.172	29.419		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01971	MBL	RA-226	0.674	0.234	0.102	NA		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.24	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.68	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01542
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02032	LCS	U-238	16.945	2.125	0.0589145	16.964		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02032	MBL	U-234	0.002	0.017	0.040141	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB
ARS1-B09-02032	MBL	U-235	-0.004	0.006	0.0355134	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB
ARS1-B09-02032	MBL	U-238	0.039	0.030	0.030577	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02032	LCSD	U-238	16.945	2.1247	17.872441	2.238368		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	0.21	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02032	LCSD	U-238	16.945	2.1247	17.872441	2.238368		pCi/L	ARS-026/Eichrom ACW-03-15	6/7/09 15:26	JB	0.60	< 3

C. Bailey
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QC Results Report

Sample Delivery Group: ARS1-09-01543
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01942	LCS	U-238	17.292	2.178	0.0676779	16.869		pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB	103	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01942	MBL	U-234	0.002	0.018	0.0436642	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB
ARS1-B09-01942	MBL	U-235	-0.004	0.006	0.0386303	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB
ARS1-B09-01942	MBL	U-238	0.008	0.017	0.0332607	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01942	LCSD	U-238	17.292	2.1778	18.280954	2.293884		pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB	0.22	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01942	LCSD	U-238	17.292	2.1778	18.280954	2.293884		pCi/L	ARS-026/Eichrom ACW-03-15	6/2/09 8:52	JB	0.63	< 3

C. Bailey
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QC Results Report

Sample Delivery Group: ARS1-09-01546
Date Received: 05/22/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01955	LCS	RA-226	31.311	8.913	0.191	29.390		pCi/L	ARS-009/EPA 903.1	6/1/09 17:07	BJS	107	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01955	MBL	RA-226	-0.200	0.104	0.201	NA	U	pCi/L	ARS-009/EPA 903.1	6/1/09 17:07	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01955	LCSD	RA-226	31.311	8.913	30.885	8.791		pCi/L	ARS-009/EPA 903.1	6/1/09 17:07	BJS	0.02	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01955	LCSD	RA-226	31.311	8.913	30.885	8.791		pCi/L	ARS-009/EPA 903.1	6/1/09 17:07	BJS	0.07	< 3

Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01552
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01978	LCS	RA-226	36.228	10.339	0.282	29.419		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS	123	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01978	MBL	RA-226	0.518	0.245	0.254	NA		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01978	LCSD	RA-226	36.228	10.339	19.801	5.677		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS	1.03	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01978	LCSD	RA-226	36.228	10.339	19.801	5.677		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS	2.79	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01552
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02021	LCS	U-238	16.744	2.106	0.0306762	16.712		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02021	MBL	U-234	-0.011	0.107	0.2782661	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD
ARS1-B09-02021	MBL	U-235	-0.013	0.089	0.2688801	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD
ARS1-B09-02021	MBL	U-238	0.000	0.074	0.2123339	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02021	LCSD	U-238	16.744	2.1060	21.312	2.945		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD	0.90	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02021	LCSD	U-238	16.744	2.1060	21.312	2.945		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD	2.52	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01553
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01978	LCS	RA-226	36.228	10.339	0.282	29.419		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS	123	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01978	MBL	RA-226	0.518	0.245	0.254	NA		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01978	LCSD	RA-226	36.228	10.339	19.801	5.677		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS	1.03	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01978	LCSD	RA-226	36.228	10.339	19.801	5.677		pCi/L	ARS-009/EPA 903.1	6/3/09 14:24	BJS	2.79	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01553
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01979	LCS	RA-226	28.252	8.071	0.040	29.507		pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS	96	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01979	MBL	RA-226	0.066	0.213	0.373	NA	U	pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01979	LCSD	RA-226	28.252	8.071	30.445	8.693		pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS	0.13	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01979	LCSD	RA-226	28.252	8.071	30.445	8.693		pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS	0.37	< 3

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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02021	LCS	U-238	16.744	2.106	0.0306762	16.712		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD	100	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02021	MBL	U-234	-0.011	0.107	0.2782661	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD
ARS1-B09-02021	MBL	U-235	-0.013	0.089	0.2688801	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD
ARS1-B09-02021	MBL	U-238	0.000	0.074	0.2123339	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02021	LCSD	U-238	16.744	2.1060	21.312	2.945		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD	0.90	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02021	LCSD	U-238	16.744	2.1060	21.312	2.945		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:18	TBYRD	2.52	< 3

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02022	LCS	U-238	13.375	1.674	0.0290548	16.775		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	80	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02022	MBL	U-234	0.027	0.036	0.0585583	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-235	0.000	0.013	0.0183455	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-238	0.005	0.027	0.0584412	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	0.45	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	1.27	< 3

C. Bullegy
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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01979	LCS	RA-226	28.252	8.071	0.040	29.507		pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS	96	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01979	MBL	RA-226	0.066	0.213	0.373	NA	U	pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01979	LCSD	RA-226	28.252	8.071	30.445	8.693		pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS	0.13	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01979	LCSD	RA-226	28.252	8.071	30.445	8.693		pCi/L	ARS-009/EPA 903.1	6/4/09 5:07	BJS	0.37	< 3

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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02022	LCS	U-238	13.375	1.674	0.0290548	16.775		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	80	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02022	MBL	U-234	0.027	0.036	0.0585583	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-235	0.000	0.013	0.0183455	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-238	0.005	0.027	0.0584412	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	0.45	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	1.27	< 3

C. Bulejy
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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01971	LCS	RA-226	28.727	8.182	0.172	29.419		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01971	MBL	RA-226	0.674	0.234	0.102	NA		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.24	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.68	< 3

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QC Results Report

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Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02022	LCS	U-238	13.375	1.674	0.0290548	16.775		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	80	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02022	MBL	U-234	0.027	0.036	0.0585583	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-235	0.000	0.013	0.0183455	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-238	0.005	0.027	0.0584412	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	0.45	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	1.27	< 3

C. Bulegin
Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01556
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01971	LCS	RA-226	28.727	8.182	0.172	29.419		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01971	MBL	RA-226	0.674	0.234	0.102	NA		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.24	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.68	< 3

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QC Results Report

Sample Delivery Group: ARS1-09-01556
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02022	LCS	U-238	13.375	1.674	0.0290548	16.775		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	80	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02022	MBL	U-234	0.027	0.036	0.0585583	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-235	0.000	0.013	0.0183455	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-238	0.005	0.027	0.0584412	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	0.45	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	1.27	< 3

C. Bulegy
Project Manager Review

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LELAP Certificate# 30658 NELAP Certificate # E87558

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QC Results Report

Sample Delivery Group: ARS1-09-01557
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-01971	LCS	RA-226	28.727	8.182	0.172	29.419		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	98	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-01971	MBL	RA-226	0.674	0.234	0.102	NA		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.24	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-01971	LCSD	RA-226	28.727	8.182	25.022	7.134		pCi/L	ARS-009/EPA 903.1	6/2/09 16:33	BJS	0.68	< 3

Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01557
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02022	LCS	U-238	13.375	1.674	0.0290548	16.775		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	80	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02022	MBL	U-234	0.027	0.036	0.0585583	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-235	0.000	0.013	0.0183455	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB
ARS1-B09-02022	MBL	U-238	0.005	0.027	0.0584412	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	0.45	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02022	LCSD	U-238	13.375	1.6741	14.971302	1.874303		pCi/L	ARS-026/Eichrom ACW-03-15	6/4/09 9:35	JB	1.27	< 3

C. Bulegij
Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01557
Date Received: 05/26/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02023	LCS	U-238	17.699	2.204	0.0111897	16.775		pCi/L	ARS-026/Eichrom ACW-03-15	6/3/09 16:18	JB	106	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02023	MBL	U-234	0.030	0.025	0.0141236	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/3/09 16:18	JB
ARS1-B09-02023	MBL	U-235	0.006	0.012	0.0163709	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/3/09 16:18	JB
ARS1-B09-02023	MBL	U-238	0.021	0.021	0.0140954	NA		pCi/L	ARS-026/Eichrom ACW-03-15	6/3/09 16:18	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02023	LCSD	U-238	17.699	2.2038	16.674862	2.149836		pCi/L	ARS-026/Eichrom ACW-03-15	6/3/09 16:18	JB	0.24	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02023	LCSD	U-238	17.699	2.2038	16.674862	2.149836		pCi/L	ARS-026/Eichrom ACW-03-15	6/3/09 16:18	JB	0.67	< 3

C. Bulegin
Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01572

Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02047	LCS	TH-230	5.52	0.8	0.1170348	5.86		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 22:12	JB	94	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02047	MBL	TH-228	0.000	0.0753511	0.1785745	NA		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 22:12	JB
ARS1-B09-02047	MBL	TH-230	0.153	0.1077377	0.0518834	NA		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 22:12	JB
ARS1-B09-02047	MBL	TH-232	0.000	0.0374495	0.0517797	NA		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 22:12	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02047	LCSD	TH-230	5.52	0.8	5.5247554	0.751168		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 22:12	JB	0.00	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02047	LCSD	TH-230	5.52	0.8	5.5247554	0.751168		pCi/L	ARS-031/Eichrom ACW-10	6/7/09 22:12	JB	0.00	< 3

Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01572
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02049	LCS	RA-226	32.898	9.378	0.254	29.594		pCi/L	ARS-009/EPA 903.1	6/8/09 15:22	TL	111	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02049	MBL	RA-226	-0.292	0.148	0.274	NA	U	pCi/L	ARS-009/EPA 903.1	6/8/09 15:22	TL

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02049	LCSD	RA-226	32.898	9.378	31.589	9.009		pCi/L	ARS-009/EPA 903.1	6/8/09 15:22	TL	0.07	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02049	LCSD	RA-226	32.898	9.378	31.589	9.009		pCi/L	ARS-009/EPA 903.1	6/8/09 15:22	TL	0.20	< 3

C. Bulligig
Project Manager Review

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QC Results Report

Sample Delivery Group: ARS1-09-01572
Date Received: 05/21/09

Laboratory Control Sample Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Percent Recovery (%)	LCS Acceptance Range
ARS1-B09-02066	LCS	U-238	14.405	1.810	0.0326001	16.696		pCi/L	ARS-026/Eichrom ACW-03-15	6/8/09 21:41	JB	86	75%-125%

Blank Evaluation

Analysis Batch	QC Type	Analyte	Analysis Results	CSU 1 (1 s)	MDC	Expected Value	Qual	Report Units	Analysis Test Method	Analysis Date/Time	Analysis Technician
ARS1-B09-02066	MBL	U-234	0.007	0.024	0.0530593	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/8/09 21:41	JB
ARS1-B09-02066	MBL	U-235	0.000	0.016	0.0226369	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/8/09 21:41	JB
ARS1-B09-02066	MBL	U-238	0.029	0.035	0.0529532	NA	U	pCi/L	ARS-026/Eichrom ACW-03-15	6/8/09 21:41	JB

RER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	RER	RER AcceptanceRange
ARS1-B09-02066	LCSD	U-238	14.405	1.8101	17.122968	2.14215		pCi/L	ARS-026/Eichrom ACW-03-15	6/8/09 21:41	JB	0.69	< 1

DER Duplicate Evaluation

Analysis Batch	QC Type	Analysis Description	Result 1	CSU 1 (1 s)	Result 2	CSU 2 (1s)	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	DER	DER AcceptanceRange
ARS1-B09-02066	LCSD	U-238	14.405	1.8101	17.122968	2.14215		pCi/L	ARS-026/Eichrom ACW-03-15	6/8/09 21:41	JB	1.94	< 3

Project Manager Review

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ARS Sample Delivery Group: ARS1-09-01531
Client Sample ID: PNV-SO-SU21TP001WW(3.0-4.0)51609
Sample Collection Date: 05/16/09
Sample Matrix: Soil/Solid

Request or PO Number: N/A
ARS Sample ID: ARS1-09-01531-015
Date Received: 05/21/09
Report Date: 06/08/09

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
U-234	1.193	0.312	0.148	0.052		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
U-235	0.092	0.082	0.050	0.000		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
U-238	1.148	0.300	0.092	0.025		pCi/g	ARS-026/Eichrom ACW-03-15	5/31/09 10:33	JB	53%
RA-226	0.529	0.274	0.326	0.149		pCi/g	ARS-009/EPA 903.1	5/28/09 3:12	BJS	100%
TH-228	0.499	0.286	0.193	0.043		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	19%
TH-230	0.588	0.311	0.223	0.059		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	19%
TH-232	0.587	0.334	0.341	0.119		pCi/g	ARS-031/Eichrom ACW-10	6/8/09 9:36	JB	19%

NOTES: CONTRACT # W912P4-07-D-0009 Date & Time 5/20/09 Air Bill Number 12 7RO 57F 23 1000 0023 Sampler Name Eric Schmitt

Project Manager Review

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LELAP Certificate# 01949 NELAP Certificate # E87558

Core and Test Pit Sample Chain of Custodies

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09-01489

COC No. PNV-001

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/14/09	17:05	PNV-SO-SU17-SB002 (11.0-12.0) - 5-14-09	1	S	N/A	X	X	X					
02	5/14/09	17:09	PNV-SO-SU17-SB002 (10.0-11.0) - 5-14-09	1	S	N/A	X	X	X					
03	5/14/09	17:13	PNV-SO-SU17-SB002 (9.0-10.0) - 5-14-09	1	S	N/A	X	X	X					
04	5/14/09	18:00	PNV-SO-SU17-SB003 (8.0-9.0)	1	S	N/A	X	X	X					
05	5/14/09	18:10	PNV-SO-SU17-SB003 (9.0-10.0)	1	S	N/A	X	X	X					
06	5/14/09	18:10	PNV-SO-SU17-SB003 (7.0-8.0)	1	S	N/A	X	X	X					
07	5/15/09	19:00	PNV-SO-SU13-SB002(6.0-7.0)51509	1	S	N/A	X	X	X					
08	5/15/09	19:05	PNV-SO-SU13-SB002(7.0-8.0)51509	1	S	N/A	X	X	X					
09	5/15/09	19:10	PNV-SO-SU13-SB002(8.0-9.0)51509	1	S	N/A	X	X	X					
10	5/15/09	15:00	PNV-SO-SU17-SB004(8.0-9.0)51509	1	S	N/A	X	X	X					
11	5/15/09	15:05	PNV-SO-SU17-SB004(8.0-9.0)51509 (MS/MSD)	1	S	N/A	X	X	X					
12	5/15/09	15:10	PNV-SO-SU17-SB004(7.0-8.0)51509	1	S	N/A	X	X	X					
13	5/15/09	15:15	PNV-SO-SU17-SB004(7.0-8.0)51509 (DUPLICATE)	1	S	N/A	X	X	X					
14	5/15/09	15:20	PNV-SO-SU17-SB004(9.0-10.0)51509	1	S	N/A	X	X	X					
15														
16	5/15/09	16:05	PNV-SO-SU17-SB005(4.0-5.0)51509	1	S	N/A	X	X	X					
17	5/15/09	16:10	PNV-SO-SU17-SB005(5.0-6.0)51509	1	S	N/A	X	X	X					
18	5/15/09	16:15	PNV-SO-SU17-SB005(6.0-7.0)51509	1	S	N/A	X	X	X					

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-18-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 005
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-18-09	10:00		5/20/09	0945
Printed Name	Eric Schmitt					
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Blo: Bioassay | Sludge

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COC No. PNV-002

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/16/09	9:45	PNV-SO-SU13SB001(9.0-10.0)51609	1	S	N/A	X	X	X					
02	5/16/09	9:30	PNV-SO-SU13SB001(8.0-9.0)51609	1	S	N/A	X	X	X					
03	5/16/09	10:00	PNV-SO-SU13SB001(10.0-11.0)51609	1	S	N/A	X	X	X					
04	5/15/09	18:33	PNV-SO-SU19TP002WW(5.0-5.5)51509	1	S	N/A	X	X	X					
05	5/15/09	18:36	PNV-SO-SU19TP002BT51509	1	S	N/A	X	X	X					
06	5/15/09	18:35	PNV-SO-SU19TP002NW(4.5-5.5)51509	1	S	N/A	X	X	X					
07	5/15/09	13:56	PNV-SO-SU19TP002S(0.0-0.5)51509	1	S	N/A	X	X	X					
08	5/17/09	10:40	PNV-SO-SU14TP001(3.0-3.5)51709	1	S	N/A	X	X	X					
09	5/17/09	14:15	PNV-SO-SU14TP001SW(5.0)51709	1	S	N/A	X	X	X					
10	5/17/09	10:45	PNV-SO-SU14TP001EW(3.5-4.0)51709	1	S	N/A	X	X	X					
11	5/17/09	14:04	PNV-SO-SU14TP001BT51709	1	S	N/A	X	X	X					
12	5/17/09	14:18	PNV-SO-SU14TP001SW(5.0)51709(DUPLICATE)	1	S	N/A	X	X	X					
13	5/16/09	14:00	PNV-SO-SU13SB0037.0-8.0)51609	1	S	N/A	X	X	X					
14	5/16/09	14:10	PNV-SO-SU13SB003(8.0-9.0)51609	1	S	N/A	X	X	X					
15	5/16/09	14:15	PNV-SO-SU13SB003(8.0-9.0)51609(DUPLICATE)	1	S	N/A	X	X	X					
16	5/16/09	16:57	PNV-SO-SU21TP001BT51609	1	S	N/A	X	X	X					
17	5/16/09	16:50	PNV-SO-SU21TP001SW(3.0-4.0)51609(DUPLICATE)	1	S	N/A	X	X	X					
18	5/16/09	16:55	PNV-SO-SU21TP001WW(3.0-4.0)51609	1	S	N/A	X	X	X					

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0023
Samplers Name (Print): Eric Schmitt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	7:50		5-21-09	0830
Printed Name	Eric Schmitt			Scottie Marcelin		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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COC No. PNV-003

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/16/09	16:50	PNV-SO-SU21TP001SW(3.0-4.0)51609	1	S	N/A	X	X	X					
02														
03														
04														
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0023
Samplers Name (Print): Eric Schmidt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	7:50		5-21-09	09:30
Printed Name	Eric Schmidt			Scottie Marcalini		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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COC No. PNV-004

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/16/09	14:40	PNV-SO-SU15TP002BT51609	1	S	N/A	X	X	X					
02	5/16/09	14:37	PNV-SO-SU15TP002SW(3.5-4.0)51609	1	S	N/A	X	X	X					
03	5/16/09	14:20	PNV-SO-SU15TP002NW(1.5-2.0)51609(DUPLICATE)	1	S	N/A	X	X	X					
04	5/16/09	14:30	PNV-SO-SU15TP002NW(1.5-2.0)51609	1	S	N/A	X	X	X					
05	5/15/09	10:25	PNV-SO-SU20TP002(0.0-0.5)51509	1	S	N/A	X	X	X					
06	5/15/09	15:20	PNV-SO-SU20TP002WW(3.5-4.0)51509(DUPLICATE)	1	S	N/A	X	X	X					
07	5/15/09	15:20	PNV-SO-SU20TP002WW(3.5-4.0)51509	1	S	N/A	X	X	X					
08	5/15/09	15:25	PNV-SO-SU20TP002BT51509	1	S	N/A	X	X	X					
09	5/15/09	15:17	PNV-SO-SU20TP002NW(5.5-6.0)51509	1	S	N/A	X	X	X					
10	5/17/09	10:54	PNV-SO-SU19TP003S51709	1	S	N/A	X	X	X					
11	5/17/09	16:40	PNV-SO-SU19TP003WW(4.5)51709	1	S	N/A	X	X	X					
12	5/17/09	16:35	PNV-SO-SU19TP003NW(5.0)51709	1	S	N/A	X	X	X					
13	5/17/09	16:45	PNV-SO-SU19TP003BT51709	1	S	N/A	X	X	X					
14	5/18/09	18:50	PNV-SO-SU16TP001BT51809	1	S	N/A	X	X	X					
15	5/18/09	18:45	PNV-SO-SU16TP001WW(5.0)51809	1	S	N/A	X	X	X					
16	5/18/09	18:42	PNV-SO-SU16TP001NW(5.5)51809(DUPLICATE)	1	S	N/A	X	X	X					
17	5/18/09	18:50	PNV-SO-SU16TP001NW(5.5)51809	1	S	N/A	X	X	X					
18	5/18/09	12:32	PNV-SO-SU16TP001S51809	1	S	N/A	X	X	X					

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0014
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	9:00		5-22-09	0945
Printed Name	Eric Schmitt			Scottie Mancuso		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-01494

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PNV-005
COC No.

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01														
02														
03	5/17/09	16:40	PNV-SO-SU22SB005(5.0-6.0)51709	1	S	N/A	X	X	X					
04	5/17/09	9:05	PNV-SOSSU22SB006(7.0-8.0)51709 X Duplicate MK 6-1-09	1	S	N/A	X	X	X					
06	5/17/09	9:10	PNV-SO-SU22SB006(8.0-9.0)51709	1	S	N/A	X	X	X					
05	5/17/09	15:10	PNV-SO-SU22SB001(4.0-5.0)51709(DUPLICATE)	1	S	N/A	X	X	X					
07	5/17/09	16:35	PNV-SO-SU22SB005(4.0-5.0)51709	1	S	N/A	X	X	X					
08	5/17/09	16:30	PNV-SO-SU22SB005(3.0-4.0)51709	1	S	N/A	X	X	X					
09	5/17/09	9:20	PNV-SO-SU22SB006(9.0-10.0)51709	1	S	N/A	X	X	X					
10	5/17/09	9:00	PNV-SO-SU22SB006(7.0-8.0)51709	1	S	N/A	X	X	X					
11	5/17/09	15:00	PNV-SO-SU22SB001(3.0-4.0)51709	1	S	N/A	X	X	X					
12	5/17/09	13:00	PNV-SO-SU22SB002(4.0-5.0)51709	1	S	N/A	X	X	X					
13	5/17/09	15:15	PNV-SO-SU22SB001(5.0-6.0)51709	1	S	N/A	X	X	X					
14	5/17/09	13:20	PNV-SO-SU22SB002(6.0-7.0)051709	1	S	N/A	X	X	X					
15	5/17/09	15:05	PNV-SO-SU22SB001(4.0-5.0)51709	1	S	N/A	X	X	X					
16	5/17/09	13:15	PNV-SO-SU22SB002(5.0-6.0)51709	1	S	N/A	X	X	X					
17	5/17/09	13:10	PNV-SO-SU22SB002(5.0-6.0)51709(FIELD DUPLICATE)	1	S	N/A	X	X	X					
18	5/17/09	13:25	PNV-SO-SU22SB002(6.0-7.0)51709	1	S	N/A	X	X	X					

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-19-09
Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0041
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-19-09	12:15		5-20-09	0945
Printed Name	Eric Schmitt					
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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9-01502

COC No. PNV-006

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01														
02	5/18/09	9:10	PNV-SO-SU22SB003(4.0-5.0)51809	1	S	N/A	X	X	X					
03	5/18/09	7:00	PNV-SO-SU22SB004(4.0-5.0)51809	1	S	N/A	X	X	X					
04	5/18/09	7:05	PNV-SO-SU22SB004(5.0-6.0)51809	1	S	N/A	X	X	X					
05	5/18/09	7:10	PNV-SO-SU22SB004(6.0-7.0)51809	1	S	N/A	X	X	X					
06	5/18/09	9:00	PNV-SO-SU22SB003(3.0-4.0)51809	1	S	N/A	X	X	X					
07	5/18/09	9:20	PNV-SO-SU22SB003(5.0-6.0)51809	1	S	N/A	X	X	X					
08	5/18/09	13:15	PNV-SO-SU23SB004(6.0-7.0)51809	1	S	N/A	X	X	X					
09	5/18/09	13:25	PNV-SO-SU23SB004(7.0-8.0)51809	1	S	N/A	X	X	X					
10	5/18/09	13:35	PNV-SO-SU23SB004(8.0-9.0)51509	1	S	N/A	X	X	X					
11	5/18/09	15:25	PNV-SO-SU14TP002-WW(1.5-2.0)51809	1	S	N/A	X	X	X					
12	5/18/09	15:20	PNV-SO-SU14TP002-BT51809	1	S	N/A	X	X	X					
13	5/18/09	9:28	PNV-SO-SU14TP002-S-51809	1	S	N/A	X	X	X					
14	5/18/09	8:41	PNV-SO-SU16TP002-S-51809	1	S	N/A	X	X	X					
15	5/18/09	15:20	PNV-SO-SU14TP002-NW(6.0)51809	1	S	N/A	X	X	X					
16														
17	5/18/09	16:30	PNV-SO-SU16TP002-BT-51809	1	S	N/A	X	X	X					
18	5/18/09	16:35	PNV-SO-SU16TP002-NW (5.5-6.0)51809	1	S	N/A	X	X	X					

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-19-09
Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0050
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-19-09	11:50		5/20/09	0945
Printed Name	Eric Schmitt					
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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COC No. PNV-007

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/18/09	15:25	PNV-SO-SU22SB007(9.0-10.0)51809	1	S	N/A	X	X	X					
02	5/18/09	15:35	PNV-SO-SU22SB007(8.0-9.0)51809	1	S	N/A	X	X	X					
03	5/18/09	15:15	PNV-SO-SU22SB007(7.0-8.0)51809	1	S	N/A	X	X	X					
04														
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0014
Samplers Name (Print): Eric Schmitt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	9:00		5-22-09	0945
Printed Name	Eric Schmitt			Scottie Marcel		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-01511

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COC No. PNV-008

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/16/09	15:05	PNV-SO-SU13SB004(8.0-9.0)51609											
02	5/16/09	15:10	PNV-SO-SU13SB004(8.0-9.0)51609(DUPLICATE)											
03	5/16/09	15:00	PNV-SO-SU13SB004(7.0-8.0)51609											
04	5/16/09	15:15	PNV-SO-SU13TP004(9.0-10.0)51609											
05	5/17/09	13:40	PNV-SO-SU15TP001WW(2.5)51709											
06	5/17/09	13:50	PNV-SO-SU15TP001BT51709											
07	5/17/09	9:02	PNV-SO-SU15TP001S51709											
08	5/17/09	13:33	PNV-SO-SU15TP001EW(2.0-3.0)51709											
09	5/17/09	11:51	PNV-SO-SU15TP001EW(2.0-3.0)51709(DUPLICATE)											
10	5/16/09	15:50	PNV-SO-SU14TP003WW(4.0-4.5)51609(DUPLICATE)											
11	5/16/09	15:45	PNV-SO-SU14TP003WW(4.0-4.5)51609											
12	5/16/09	15:55	PNV-SO-SU14TP003SW(5.0-5.0)51609											
13	5/16/09	15:52	PNV-SO-SU14TP003BT51609											
14	5/19/09	7:00	PNV-SO-SU25SB001(5.0-6.0)51909											
15	5/19/09	7:20	PNV-SO-SU25SB001(7.0-8.0)51909											
16	5/19/09	7:10	PNV-SO-SU25SB001(6.0-7.0)51909											
17	5/19/09	9:00	PNV-SO-SU25SB002(6.0-7.0)51909											
18	5/19/09	9:10	PNV-SO-SU25SB002(7.0-8.0)51909											

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-21-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0032
Samplers Name (Print): Eric Schmitt
Samplers Signature: [signature]
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-21-09	7:00	[signature]	5-22-09	09:45
Printed Name	Eric Schmitt			Scottie Marcelin		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-0154

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Port Allen, LA 70767-3469
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COC No. PNV-009

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/19/09	9:40	PNV-SO-SU25SB002(8.0-9.0)51909	1	S	N/A	X	X	X					
02	5/19/09	9:50	PNV-SO-SU25SB002(8.0-9.0)51909(DUPLICATE)	1	S	N/A	X	X	X					
03														
04														
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09
Courier:
Air Bill Number: 12 7R0 57F 23 1000 0032
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	7:00		5-22-09	0945
Printed Name	Eric Schmitt			Scottie Marsh		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-D[illegible]37

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
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COC No. PNV-012

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/19/09	17:00	PNV-SO-SU26SB003(7.0-8.0)51909	1	S	N/A	X	X	X					
02	5/19/09	17:10	PNV-SO-SU26SB003(8.0-9.0)51909	1	S	N/A	X	X	X					
03	5/19/09	17:20	PNV-SO-SU26SB003(9.0-10.0)51909	1	S	N/A	X	X	X					
04	5/20/09	7:30	PNV-SO-SU23SB006(9.0-10.0)51009	1	S	N/A	X	X	X					
05	5/20/09	7:40	PNV-SO-SU23SB006(10.0-11.0)52009	1	S	N/A	X	X	X					
06	5/20/09	7:40	PNV-SO-SU23SB006(11.0-12.0)52009	1	S	N/A	X	X	X					
07	5/20/09	9:00	PNV-SO-SU23SB005(5.0-6.0)52009	1	S	N/A	X	X	X					
08	5/20/09	9:05	PNV-SO-SU23SB005(6.0-7.0)52009	1	S	N/A	X	X	X					
09	5/20/09	9:10	PNV-SO-SU23SB005(6.0-7.0)52009(DUPLICATE)	1	S	N/A	X	X	X					
10	5/20/09	9:15	PNV-SO-SU23SB005(7.0-8.0)52009	1	S	N/A	X	X	X					
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5/21/09 0:00
Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0078
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-21-09	8:00	[signature]	5/22/09	0845
Printed Name	Eric Schmitt			Cristho Morales		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-01538

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
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COC No. PNV-013

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/19/09	8:05	PNV-SO-SU20TP001-S-51909	1	S	N/A	X	X	X					
02	5/19/09	15:27	PNV-SO-SU20TP001-NW(5.0)51909(DUPLICATE)	1	S	N/A	X	X	X					
03	5/19/09	15:26	PNV-SO-SU20TP001-WW(5.0)51909(DUPLICATE)	1	S	N/A	X	X	X					
04	5/19/09	15:28	PNV-SO-SU20TP001-NW(5.0)51909	1	S	N/A	X	X	X					
05	5/19/09	15:32	PNV-SO-SU20TP001-WW(5.0)51909	1	S	N/A	X	X	X					
06	5/19/09	15:34	PNV-SO-SU20TP001-BT51909	1	S	N/A	X	X	X					
07	5/19/09	8:55	PNV-SO-SU19TP001-S-51909	1	S	N/A	X	X	X					
08	5/19/09	18:50	PNV-SO-SU19TP001-EW(6.0)51509(~~DUPLICATE~~) PB 5-21-09	1	S	N/A	X	X	X					
09	5/19/09	18:55	PNV-SO-SU19TO001-WW(5.0)51909	1	S	N/A	X	X	X					
10	5/19/09	19:00	PNV-SO-SU19TP001-BT51509	1	S	N/A	X	X	X					
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0130
Samplers Name (Print): Eric Schmitt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	9:45		5-22-09	08:45
Printed Name	Eric Schmitt			Scottie Moreau		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-015

ARS INTERNATIONAL

2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
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COC No. PNV-014

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3489
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/16/09	16:08	PNV-SO-SU14TP001-S-51609	1	S	N/A	X	X	X					
02	5/16/09	9:09	PNV-SO-SU21TP001-S-51609	1	S	N/A	X	X	X					
03	5/16/09	8:58	PNV-SO-SU14TP003-S-51609	1	S	N/A	X	X	X					
04	5/16/09	8:24	PNV-SO-SU15TP002-S-51609	1	S	N/A	X	X	X					
05	5/19/09	13:00	PNV-SO-SU26SB001(3.0-4.0)51909	1	S	N/A	X	X	X					
06	5/19/09	13:10	PNV-SO-SU26SB001(4.0-5.0)51909	1	S	N/A	X	X	X					
07	5/19/09	13:20	PNV-SO-SU26SB001(5.0-6.0)51909	1	S	N/A	X	X	X					
08														
09														
10														
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5/21/09 0:00 Courier: UPS
Air Bill Number: 12 7RO 57F 23 1000 0121
Samplers Name (Print): Eric Schmitt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	10:00		5-22-09	09:45
Printed Name	Eric Schmitt			Sutthi Marcelin		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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09-0155

COC No. PNV-015

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/18/09	18:00	PNV-SO-SU23SB003(2.0-3.0)51809	1	S	N/A	X	X	X					
02	5/18/09	18:10	PNV-SO-SU23SB003(3.0-4.0)51809	1	S	N/A	X	X	X					
03	5/18/09	18:20	PNV-SO-SU23SB003(4.0-5.0)51809	1	S	N/A	X	X	X					
04	5/19/09	15:00	PNV-SO-SU26SB002(7.0-8.0)51909	1	S	N/A	X	X	X					
05	5/19/09	15:05	PNV-SO-SU26SB002(8.0-9.0)51909	1	S	N/A	X	X	X					
06	5/19/09	15:15	PNV-SO-SU26SB002(8.0-9.0)51909(DUPLICATE)	1	S	N/A	X	X	X					
07	5/19/09	15:25	PNV-SO-SU26SB002(9.0-10.0)51909	1	S	N/A	X	X	X					
08	5/20/09	7:46	PNV-SO-SU18TP001SW(5.0)512009	1	S	N/A	X	X	X					
09	5/20/09	7:52	PNV-SO-SU18TP001NW(5.5)52009	1	S	N/A	X	X	X					
10	5/20/09	7:54	PNV-SO-SU18TP001BT52009	1	S	N/A	X	X	X					
11	5/20/09	13:37	PNV-SO-SU18TP001S52009	1	S	N/A	X	X	X					
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 12 7RO 57F 23 1000 0112
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	11:00		5-26-09	10:30
Printed Name	Eric Schmitt			Scottie Marabi		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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FX: (225) 381-2996
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COC No. PNV-016

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09	15:23	PNV-SO-SU15TP003-S-52009	1	S	N/A	X	X	X					
02	5/20/09	17:56	PNV-SO-SU15TP003-SW(6.0)-52009	1	S	N/A	X	X	X					
03	5/20/09	17:58	PNV-SO-SU15TP003-BT-52009	1	S	N/A	X	X	X					
04	5/20/09	18:00	PNV-SO-SU15TP003-NW(6.0)-52009	1	S	N/A	X	X	X					
05	5/20/09	14:46	PNV-SO-SU18TP002EW(5.5)52009	1	S	N/A	X	X	X					
06	5/20/09	14:48	PNV-SO-SU18TP002WW(6.0)52009	1	S	N/A	X	X	X					
07	5/20/09	14:50	PNV-SO-SU18TP002BT-52009	1	S	N/A	X	X	X					
08	5/20/09	14:00	PNV-SO-SU23SB002(0.5-1.5)52009	1	S	N/A	X	X	X					
09	5/20/09	14:05	PNV-SO-SU23SB002(0.5-1.5)52009(DUPLICATE)	1	S	N/A	X	X	X					
10	5/20/09	14:10	PNV-SO-SU23SB002(1.5-2.5)52009	1	S	N/A	X	X	X					
11	5/20/09	14:25	PNV-SO-SU23SB002(2.5-3.5)52009	1	S	N/A	X	X	X					
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 010 3
Samplers Name (Print): Eric Schmidt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-21-09	12:00	[signature]	5/26/09	10:30
Printed Name	Eric Schmidt			Scottie Marsh		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ARS INTERNATIONAL
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Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
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COC No. PNV-018

Company Name: ARS International
Client Contact : Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09	17:55	PNV-SO-SU1SB001(6.0-7.0)52009	1	S	N/A	X	X	X					
02	5/20/09	17:25	PNV-SO-SU1SB001(7.0-8.0)52009	1	S	N/A	X	X	X					
03	5/20/09	17:30	PNV-SO-SU1SB001(7.0-8.0)52009(DUPLICATE)	1	S	N/A	X	X	X					
04	5/20/09	17:40	PNV-SO-SU1SB001(8.0-9.0)52009	1	S	N/A	X	X	X					
05	5/21/09	13:00	PNV-SO-SU2SB001(9.0-10.0)52109	1	S	N/A	X	X	X					
06	5/21/09	13:05	PNV-SO-SU2SB001(10.0-11.0)52109	1	S	N/A	X	X	X					
07	5/21/09	13:15	PNV-SO-SU2SB001(11.0-12.0)52109	1	S	N/A	X	X	X					
08	5/21/09	13:25	PNV-SO-SU2SB001(11.0-12.0)52109(DUPLICATE)	1	S	N/A	X	X	X					
09	5/20/09	11:00	PNV-SO-SU23SB001(2,0-3.0)52009	1	S	N/A	X	X	X					
10	5/20/09	11:10	PNV-SO-SU23SB001(3.0-4.0)52009	1	S	N/A	X	X	X					
11	5/20/09	11:20	PNV-SO-SU23SB001(4.0-5.0)52009	1	S	N/A	X	X	X					
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0096
Samplers Name (Print): Eric Schmidt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-22-09	6:15		5/26/09	10:50
Printed Name	Eric Schmidt					
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Blo: Bioassay | Sludge

09 21553

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-019

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	7:15	PNV-SO-SU2SB002(9.0-10.0)52109	1	S	N/A	X	X	X					
02	5/21/09	7:20	PNV-SO-SU2SB002(10.0-11.0)52109	1	S	N/A	X	X	X					
03	5/21/09	7:25	PNV-SO-SU2SB002(11.0-12.0)52109	1	S	N/A	X	X	X					
04	5/20/09	16:00	PNV-SO-SU1SB002(6.0-7.0)52009	1	S	N/A	X	X	X					
05	5/20/09	16:10	PNV-SO-SU1SB002(7.0-8.0)52009	1	S	N/A	X	X	X					
06	5/20/09	16:20	PNV-SO-SU1SB002(8.0-9.0)52009	1	S	N/A	X	X	X					
07	5/18/09	16:40	PNV-SO-SU16TP002WW(6.0)51809	1	S	N/A	X	X	X					
08	5/19/09	8:50	PNV-SO-SU19TP004-S-51909	1	S	N/A	X	X	X					
09	5/21/09	15:30	PNV-SO-SU2SB003(6.0-7.0)52109	1	S	N/A	X	X	X					
10	5/21/09	15:40	PNV-SO-SU2SB003(7.0-8.0)52109	1	S	N/A	X	X	X					
11	5/21/09	15:50	PNV-SO-SU2SB003(8.0-9.0)52109	1	S	N/A	X	X	X					
12														
13														
14														
15														
16														
17														
18														

Method of Shipment: NEXGT DAY AIR
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 12 720 57F 23 1000 0149
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-22-09	8:30		5-26-09	10:30
Printed Name	Eric Schmitt			Scottie Marolo		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

09-0556

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-020

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09	14:20	PNV-SO-SU23SB002(1.5-2.5)52009(MS/MSD)	1	S	N/A								
02	5/19/09	15:20	PNV-SO-SU26SB002(9.0-10.0)51909(MS/MSD)	1	S	N/A								
03	5/20/09	7:48	PNV-SO-SU18TP001SW(5.0)52009(MS/MSD)	1	S	N/A								
04	5/21/09	13:10	PNV-SO-SU2SB001(10.0-11.0)52109(MS/MSD)	1	S	N/A								
05	5/19/09	18:50	PNV-SO-SU19TP001EW(6.0)51909(MS/MSD)	1	S	N/A								
06	5/19/09	9:20	PNV-SO-SU25SB002(7.0-8.0)51909(MS/MSD)	1	S	N/A								
07	5/20/09	17:20	PNV-SO-SU1SB001(6.0-7.0)52009(MS/MSD)	1	S	N/A								
08	5/18/09	18:42	PNV-SO-SU16TP001NW(5.5)51809(MS/MSD)	1	S	N/A								
09	5/16/09	15:45	PNV-SO-SU14TP003WW(4.0-4.5)51609(MS/MSD)	1	S	N/A								
10	5/15/09	15:17	PNV-SO-SU20TP002NW(5.5-6.0)51509(MS/MSD)	1	S	N/A								
11	5/17/09	9:15	PNV-SO-SU22SB006(8.0-9.0)51709(MS/MSD)	1	S	N/A								
12	5/16/09	14:25	PNV-SO-SU13SB003(9.0-10.0)51609~~(MS/MSD)~~ es 52609	1	S	N/A								
13	5/16/09	14:35	PNV-SO-SU15TP002SW(3.5-4.0)51609(MS/MSD)	1	S	N/A								
14	5/16/09	14:05	PNV-SO-SU13SB003(7.0-8.0)51609(MS/MSD)	1	S	N/A								
15	5/16/09	16:55	PNV-SO-SU21TP001WW(3.0-4.0)51609(MS/MSD)	1	S	N/A								
16	5/17/09	14:10	PNV-SO-SU14TP001SW(5.0)51709(MS/MSD)	1	S	N/A								
17	5/21/09	18:00	PNV-SO-SU17~~TP~~001(9.0-10.0)52109 es 52609 SB	1	S	N/A								
18	5/21/09	18:05	PNV-SO-SU17~~TP~~001(10.0-11.0)52109 es 52609 SB	1	S	N/A								

Method of Shipment: Next Day Air
Date & Time of Shipment:
Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0167
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5.22.09	9:30		5.26.09	10:30
Printed Name	Eric Schmitt			Sasha Mrach		
Signature						
Printed Name						

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-022

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ARS International
Project Manager: Project Management
Address: 2609 North River Rd
Port Allen, LA 70767-3469
Phone: (225) 381-2991
Fax: (225) 381-2996
Email: ProjectManagers@amrad.com

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	18:10	PNV-SO-SU17SB001(11.0-12.0)52109 DUPLICATE	1	S	N/A	✓	✓	✓					
02	5/21/09	18:15	PNV-SO-SU17SB001(11.0-12.0)52109	1	S	N/A	✓	✓	✓					
03														
04														
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														
16														
17														
18														

Method of Shipment:
Date & Time of Shipment:
Courier:
Air Bill Number: 12 7R0 57F 23 1000 0167
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5 22 09	8:30	[signature]	5 22 09	10:35
Printed Name	Eric Schmitt			Scottie Moss		
Signature						
Printed Name						

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

IDW and RCRA Laboratory Analytical Reports

IDW and RCRA Laboratory Analytical Reports

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-DECON PAD
Laboratory Report Identification: 09050618

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

3 samples were received by Assaigai Analytical Laboratories, Inc. on Friday, May 22, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050618-007B	PNV-L-DECON PAD	TCLP	Pesticides
09050618-007B	PNV-L-DECON PAD	WATER	Pesticides
09050618-013A	PNV-SO-IDW GREY	SOLID	Pesticides
09050618-019B	PNV-SO-SU1S B002-7	TCLP	Pesticides
09050618-019B	PNV-SO-SU1S B002-7	WATER	Pesticides

Preparation Methods and Dates

Preparation Method	Preparation Date
PCBs by SW846 3510C	05-26-2009
PCBs in solids by SW846 3550B	05-23-2009
Pesticides in Soil by SW846 3550B	05-23-2009
TCLP Pesticides by SW846 3510C	05-26-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8081A Pesticides by GC/ECD	05-27-2009
8081A Pesticides by GC/ECD TCLP	05-28-2009
8082 PCBs by GC/ECD	05-28-2009
8082 PCBs by GC/ECD	05-29-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 17:07:52

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-017

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: Assaigai Analytical Laboratory
Project Manager:
Address: 4301 Masthead N.E.
Albuquerque, NM 87109
Phone: 505-345-8964
Fax: 505-345-7259
Email:

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	11:35	PNV-L-SU1SB002-7-052109(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 DHM				
02	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C					X		X	
03	5/21/09	11:35	PNV-L-SU1SB002-7-052109(FIELD BLANK)	1	L	4C		X	X	5-22-09 DHM				
04	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C						X		X
05	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C				X				
06	5/21/09	11:35	PNV-SO-SU1SB002-7-052109(TRIP BLANK)	1	L	4C			X	5-22-09 DHM				
07	5/21/09	12:31	DECON PAD WATER	1	L	4C				X				
08	5/21/09	12:35	DECON PAD EQUIPMENT BLANK	1	L	4C		X	X	5-22-09 DHM				
09	5/21/09	12:36	DECON PAD FIELD BLANK	1	L	4C		X	X					
10	5/21/09	12:30	DECON PAD WATER CONTAINER 1 OF 2	1	L	4C					X		X	
11	5/21/09	12:30	DECON PAD WATER CONTAINER 2 OF 2	1	L	4C						X		X
12	5/21/09	14:10	IDW GREY B25 BOX 1 OF 2	1	S	4C					X		X	
13	5/21/09	14:10	IDW GREY B25 BOX 2 OF 2	1	S	4C						X		X
14	5/21/09	14:12	IDW GREY B25 BOX	1	S	4C				X				
15	5/21/09	14:15	IDW GREY B25 FIELD BLANK	1	L	4C		X	X	5-22-09 DHM				
16	5/21/09	14:16	IDW GREY B25 EQUIPMENT BLANK	1	L	4C		X	X					
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0087
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	4:10	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	052209	1100
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Cooler temp: 5.0°C

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No.: 09DS0018 Date

Page 1 of 2

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers: (signature)

Analysis Required

RAS Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Bot. radials	TCLP VOA	TCLP Pest	TCLP PCB	TCLP SVOA	Remarks
CD1A	Decon Pad EB	052109	1235	L	40 mL vial	4°C	HCl	2	X						
CD1A	EB		↓	L	8 oz G		HNO_3	1		X					
CD2A	EB		1236	L	40 mL vial		HCl	2	X						
CD2A	EB		↓	L	8 oz G		HNO_3	1		X					
CD3AB			1231	L	60 mL AG		T	1			X				
CD3AB	↓		1230	L	8 oz G		↓	2				X	X	X	X
DD1A	IDW Grey BRS EB		1416	L	40 mL vial		HCl	2	X						
DD1A	EB		↓	L	8 oz G		HNO_3	1		X					
DD2A	EB		1415	L	40 mL vial		HCl	2	X						
DD2A	EB		↓	L	8 oz G		HNO_3	1		X					
DD3AB			1412	S	60 mL AG		T	1			X				
DD3AB	↓	↓	1410	S	8 oz G	↓	↓	2				X	X	X	X	Composite

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Page 1 of 1

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. 0905U618 Date _____

Page 2 of 2

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest.	TCLP OCP	TCLP Total metals	TCLP SVOA		Remarks
0134	SU25 8002-7 EB	050109	1135	L	40 mL vial	4°C	HCl	2	X								
0134A	EB			L	8 oz G		HNO_3	1		X							
0135A	EB			L	40 mL vial		HCl	2	X								
0136A	FB			L	8 oz G		HNO_3	1		X							
0137A	TB			L	60 mL AG		T	1	X								
0138AB				S	↓		T	1			X						
0139ABD				S	8 oz G			2				X	X	X	X		

COLLECTED

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ❑ Disposed of (additional fee)
- ❑ Stored (30 days max)
- ❑ Stored over 30 days (additional fee)
- ❑ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050618

WORKORD	09050618	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- [x] A) Do the number of sample containers match the Chain-of-Custody (COC)?
- [x] B) Does all the information on sample labels match the information on the COC?
- [x] C) Are all sample containers intact?
- [x] D) Are cooler custody seals intact?
- [x] E) Are container custody seals intact?
- [ ] F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- [x] 1) Are sample containers appropriate for analysis requested?
- [x] 2) Is there sufficient volume for requested analyses?
- [x] 3) Are samples properly preserved?
- [x] 4) Are samples received within hold time?
- [ ] 5) Headspace present (as applicable)?
- [ ] **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Cooler ID	Temperature
ARS01001	5 C

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050618

Date/Time	Assaigai Contact	Client Contact	Details
05-26-09 17:20	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 8082
Preparatory/Analytical Batch ID:	S09227

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

The 1016/1260 Aroclor sumations pass for all initial and continuing calibration verifications on the reported column.

Note: A five point calibration was utilized for Aroclors 1016 and 1260

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes.

Laboratory Control Sample (LCS)

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries were within QC criteria.

All MS/MSD RPDs were within QC criteria on the reported column.

Surrogate

All surrogate recoveries were within QC criteria, with the exception of the DCB in samples MB, PNV-SO-IDW GREY[MSD], which were outside of QC criteria high. Data is validated by the passing of TCMX. The QC trend will be monitored to ensure that the QC windows are appropriate.

Miscellaneous:

Sample PNV-SO-IDW GREY was analyzed on a total basis (as a solid) rather than a TCLP basis due to insufficient sample provided by the client for the TCLP analysis.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W Brown

Date: 06/09/2009

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 1311/8082
Preparatory/Analytical Batch ID:	S09238

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

The 1016/1260 Aroclor sumations pass for all initial and continuing calibration verifications on the reported column.

Note: A five point calibration was utilized for Aroclors 1016 and 1260

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes.

Laboratory Control Sample (LCS)

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries were within QC criteria.

All MS/MSD RPDs were within QC criteria on the reported column.

Surrogate

All surrogate recoveries were within QC criteria, with the exception of the DCB in samples MB, LCS, PNV-SO-SU23SB005[MS] and PNV-SO-SU1S B002-7, which were outside of QC criteria high. Data is validated by the passing of TCMX. The QC trend will be monitored to ensure that the QC windows are appropriate.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Briers

Date: 06/09/2009

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: MB

Sample wt/vol: 30 G Lab File ID: 1PS3056.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 12:31:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8082

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	0.050	mg/Kg	0.004	U
11104-28-2	Aroclor 1221	0.050	mg/Kg	0.011	U
11141-16-5	Aroclor 1232	0.050	mg/Kg	0.004	U
53469-21-9	Aroclor 1242	0.050	mg/Kg	0.005	U
12672-29-6	Aroclor 1248	0.050	mg/Kg	0.001	U
11097-69-1	Aroclor 1254	0.050	mg/Kg	0.004	U
11096-82-5	Aroclor 1260	0.050	mg/Kg	0.007	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: LCS

Sample wt/vol: 30 G Lab File ID: 1PS3057.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 13:02:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8082

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	0.0616	mg/Kg	0.004	
11096-82-5	Aroclor 1260	0.0638	mg/Kg	0.007	

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A

Sample wt/vol: 2 G Lab File ID: 1PS3058.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 14:10:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 13:34:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8082

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	0.75	mg/Kg	0.058	U
11104-28-2	Aroclor 1221	0.75	mg/Kg	0.16	U
11141-16-5	Aroclor 1232	0.75	mg/Kg	0.064	U
53469-21-9	Aroclor 1242	0.75	mg/Kg	0.075	U
12672-29-6	Aroclor 1248	0.75	mg/Kg	0.018	U
11097-69-1	Aroclor 1254	0.75	mg/Kg	0.054	U
11096-82-5	Aroclor 1260	0.75	mg/Kg	0.10	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MS]

Sample wt/vol: 2 G Lab File ID: 1PS3059.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 14:05:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8082

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	0.759	mg/Kg	0.058	
11096-82-5	Aroclor 1260	0.932	mg/Kg	0.10	

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MSD]

Sample wt/vol: 2 G Lab File ID: 1PS3060.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 14:37:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8082

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	0.786	mg/Kg	0.058	
11096-82-5	Aroclor 1260	0.971	mg/Kg	0.10	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 1000 ML Lab File ID: 1PS3065.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:44:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016 #2	0.50	ug/L	0.10	U
11104-28-2	Aroclor 1221	0.50	ug/L	0.14	U
11141-16-5	Aroclor 1232	0.50	ug/L	0.20	U
53469-21-9	Aroclor 1242	0.50	ug/L	0.20	U
12672-29-6	Aroclor 1248	0.50	ug/L	0.070	U
11097-69-1	Aroclor 1254	0.50	ug/L	0.060	U
11096-82-5	Aroclor 1260	0.50	ug/L	0.070	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 1000 ML Lab File ID: 1PS3066.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 18:15:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	1.37	ug/L	0.10	
11096-82-5	Aroclor 1260		1.15	ug/L	0.070	

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-007B

Sample wt/vol: 140 ML Lab File ID: 1PS3076.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 12:30:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 23:29:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	3.6	ug/L	0.71	U
11104-28-2	Aroclor 1221		3.6	ug/L	1.0	U
11141-16-5	Aroclor 1232		3.6	ug/L	1.4	U
53469-21-9	Aroclor 1242		3.6	ug/L	1.4	U
12672-29-6	Aroclor 1248		3.6	ug/L	0.50	U
11097-69-1	Aroclor 1254		3.6	ug/L	0.43	U
11096-82-5	Aroclor 1260		3.6	ug/L	0.50	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU1S B002-7

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-019B

Sample wt/vol: 930 ML Lab File ID: 1PS3077.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 11:35:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-29-2009 0:01:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.54	ug/L	0.11	U
11104-28-2	Aroclor 1221		0.54	ug/L	0.15	U
11141-16-5	Aroclor 1232		0.54	ug/L	0.22	U
53469-21-9	Aroclor 1242		0.54	ug/L	0.22	U
12672-29-6	Aroclor 1248		0.54	ug/L	0.075	U
11097-69-1	Aroclor 1254		0.54	ug/L	0.064	U
11096-82-5	Aroclor 1260		0.54	ug/L	0.075	U

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-SU23SB001 EB
Laboratory Report Identification: 09050616

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

17 samples were received by Assaigai Analytical Laboratories, Inc. on Thursday, May 21, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050616-001A	PNV-L-SU23SB001 EB	WATER	VOA
09050616-003A	PNV-L-SU23SB001 FB	WATER	VOA
09050616-005A	PNV-L-SU23SB001 TB	WATER	VOA
09050616-006B	PNV-SO-SU23SB001	TCLP	VOA
09050616-008A	PNV-L-SU23SB002 EB	WATER	VOA
09050616-010A	PNV-L-SU23SB002 FB	WATER	VOA
09050616-012A	PNV-L-SU23SB002 TB	WATER	VOA
09050616-013B	PNV-SO-SU23SB002	TCLP	VOA
09050616-015A	PNV-L-SU23SB005 EB	WATER	VOA
09050616-017A	PNV-L-SU23SB005 FB	WATER	VOA
09050616-019A	PNV-L-SU23SB005 TB	WATER	VOA
09050616-020B	PNV-SO-SU23SB005	TCLP	VOA
09050616-021B	PNV-SO-SU23SB005 DUP	TCLP	VOA
09050616-024A	PNV-L-SU23SB006 EB	WATER	VOA
09050616-026A	PNV-L-SU23SB006 FB	WATER	VOA
09050616-028A	PNV-L-SU23SB006 TB	WATER	VOA
09050616-029B	PNV-SO-SU23SB006	TCLP	VOA

Preparation Methods and Dates

Preparation Method	Preparation Date
VOCs by SW846 1311/5030B	05-26-2009
VOCs by SW846 1311/5030B	05-27-2009
VOCs by SW846 5030B	05-27-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8260C Purgeable VOCs by GC/MS	05-27-2009
8260C Purgeable VOCs by GC/MS TCLP	05-26-2009
8260C Purgeable VOCs by GC/MS TCLP	05-27-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 16:55:41

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-010

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Ass Algi
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master Loop
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505-3115964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	~~Isotopic Thorium~~	~~Isotopic Uranium~~	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
02	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X				
03	~~5/20/09~~		~~PNV-L-SU23-SB005-52009(TRIP BLANK)~~	1	L	4C								
04	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C					5-22-09 VHM	X	X	X
05	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C					X	X	X	X
06	5/20/09		PNV-L-SU23SB005-52009 (FIELD BLANK) 05-22-09 VHM	1	L	4C		X	X	5-21-09 VHM				
07	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X	5-22-09 VHM			
08	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C						X	X	X
09	5/20/09		PNV-L-SU23SB005-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
10	5/20/09		PNV-L-SU23SB006-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 VHM				
11	5/20/09		PNV-L-SU23SB006-52009 (TRIP BLANK)	1	L	4C			X	5-21-09 VHM				
12	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C				X				
13	5/20/09		PNV-L-SU23SB006-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C					X			X
15	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C					X	X	X	X
16	5/20/09		PNV-L-SU23SB001-52009 (EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
17	5/20/09		PNV-SO-SU23SB005-52009 (MS/MSD)	1	S	4C				X	X	5-22-09 VHM		X 5-22-09 VHM
18	5/20/09		PNV-SO-SU23SB001-52009	1	S	4C						X	X	

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-20-09 Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	05-22-09	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Page 3 of 11

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-011

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: slombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master head
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505. 345. 8964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

5-22-09 JKM Total Metals
5-20-09 VOA

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-L-SU23SB005-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JKM				
02	5/20/09		PNV-L-SU23SB001-52009(FIELD BLANK)	1	L	4C		X	X					
03	5/20/09		PNV-SO0SU23SB001-52009	1	S	4C				X				
04	5/20/09		PNV-L-SU23SB001-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JKM				
05	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
06	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C				X				
07	5/20/09		PNV-L-SU23SB002-52009(FIELD BLANK)	1	L	4C		X	X					
08	5/20/09		PNV-L-SU23SB002-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 JKM				
09	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C				X				
10	5/20/09		PNV-L-SU23SB002-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JKM				
11	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C					X		X	
12	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C						X		X
13	5/20/09		PNV-L-SU23-52009 (TEMPERATURE BLANK)	1	L	4C								
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C						X	X	
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew D. Eden	052209	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Chain of Custody Record

Lab job No. D9105 0116 Date

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers: (signature)

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation: Temp	Preservation: Chemical	No. of Containers	VOA	Tot. Metals	TCLP VOA	TCLP Pest.	TCLP AKB	TCLP Tal. metals	TCLP SVOA		Remarks
001A	SU239 B001 EB	052009	7	L	40 mL vial	4°C	HCl	2	X								
002A	EB			L	250 mL AG		HNO_3	1		X							
003A	EB			L	40 mL vial		HCl	2	X								
004A	EB			L	250 mL AG		HNO_3	1		X							
005A	TB			L	60 mL AG		T	1	X								
006AB				S	↓			1			X						
007AB	↓			S	250 mL AG		↓	2				X	X	X	X		
008A	SU239 B002 EB			L	40 mL vial		HCl	2	X								
009A	EB			L	250 mL AG		HNO_3	1		X							
010A	EB			L	40 mL vial		HCl	2	X								
011A	EB			L	250 mL AG		HNO_3	1		X							
012A	TB			L	60 mL AG		—		X								

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

4" X" OUTS DMS 052009

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: 0905016016 Date: _____

Page 2 of 3

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp	Preservation Chemical	No. of Containers	VOA	Pet. gasoline	TCLP VOA	TCLP BNA	TCLP Pest.	Total metals	TCLP Metals	SVOA	Remarks
01SAB	SU23 B002	052009	T	S	60 mL AG	4°C	T	1			X						
01GAB	↓			S	250 mL AG		↓	2				X	X	X	X	X 052009	
01SA	SU23 B005 EB			L	40 mL vial		HCl	2	X								
01GA	EB			L	250 mL AG		HNO_3	1		X							
02SA	EB			L	40 mL vial		HCl	2	X								
02GA	EB			L	250 mL AG		HNO_3	1		X							
03SA	TB			L	60 mL AG			1	X								
01SAB				S				3			X						Include MS/MSD
02SAB	DUP			S				1			X						
02GAB				S	250 mL AG			4				X	X	X	X		Include MS/MSD
03GAB	DUP			S				2				X	X	X	X		

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature:		Signature:	Signature:		Signature:
Printed:		Printed:	Printed:		Printed:
Company:		Company:	Company:		Company:
Reason:		Reason:	Reason:		Reason:

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab Job No. 0905D616 Date _____

Page 3 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	TCLP metals	TCLP VOA	TCLP Pest	TCLP PCB	TCLP Tal metals	TCLP SVOA			Remarks
024A	SU235 B006 EB	052005	T	L	40 mL vial	4°C	HCl	2	X									
025A	EB			L	250 mL AG		HNO_3	1		X								
026A	FB			L	40 mL vial		HCl	2	X									
027A	FB			L	250 mL AG		HNO_3	1		X								
028A	TB			L	60 mL AG		T	1	X									
029AB				S				1			X							
030AB				S	250 mL AG			2				X	X	X	X			

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

OFFICIAL

Page 7 of 11

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050616

WORKORD	09050616	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?

☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050616

Date/Time	*Assaigai Contact*	*Client Contact*	*Details*
05-26-09 17:21	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information
Analytical Method: SW846 8260C
Preparatory/Analytical Batch ID: V09190

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for target analytes, with the exception of Vinyl acetate, which was outside of QC criteria high. The high vinyl acetate recovery does not affect client samples, as all results for this compound were <MDL.

Quality Control Information:

Method Blank

All laboratory method blanks associated with these analyses were non-detect for target analytes at the CRDL. However, Acetone was detected above the MDL, but below the CRDL in one method blank. All samples associated with the MB were either <MDL and were therefore unaffected, or were flagged with a "B" qualifier to indicate the contamination.

Laboratory Control Sample (LCS)

All LCS recoveries were within QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

2 of 114 MS recoveries were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

1 of 57 MS/MSD RPDs were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

Internal Standards

All internal standards were within method criteria.

Surrogate Standards

All surrogates were within AALI's QC criteria, with the exception of Dibromofluoromethane and Toluene-D8 in the majority of the samples, which were above QC criteria. This is attributed to a change in the QC trend and not to matrix effects.

Miscellaneous:

Please note that the TCLP results are reported in mg/L and Total results are reported in ug/L.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Biava

Date: 6/09/2009

Organic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW846 1311/8260C
Preparatory/Analytical Batch ID:	V09191, V09192

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for target analytes.

Quality Control Information:

Method Blank

All laboratory method blanks associated with these analyses were non-detect for target analytes at the CRDL. However, Methyl ethyl ketone and Tetrachloroethylene were detected above the MDL, but below the CRDL. All samples associated with the MB were either <MDL and were therefore unaffected, or were flagged with a "B" qualifier to indicate the contamination.

Laboratory Control Sample (LCS)

All LCS recoveries were within QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries and RPDs were within QC criteria.

Internal Standards

All internal standards were within method criteria.

Surrogate Standards

All surrogates were within AALI's QC criteria, with the exception of Dibromofluoromethane and Toluene-D8 in the MS and in the MSD, which were above QC criteria. This is attributed to a change in the QC trend and not to matrix effects.

Miscellaneous:

Please note that the TCLP results are reported in mg/L and Total results are reported in ug/L.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Biava

Date: 6/09/2009

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 3VA78625.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 11:59:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0466	mg/L	0.0002	
107-06-2	1,2-Dichloroethane (EDC)	0.0541	mg/L	0.0002	
71-43-2	Benzene	0.0540	mg/L	0.0002	
56-23-5	Carbon tetrachloride	0.0597	mg/L	0.0002	
108-90-7	Chlorobenzene	0.0474	mg/L	0.0003	
67-66-3	Chloroform	0.0525	mg/L	0.0002	
78-93-3	Methyl ethyl ketone	0.0529	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0516	mg/L	0.0003	
79-01-6	Trichloroethylene	0.0541	mg/L	0.0003	
75-01-4	Vinyl chloride	0.0488	mg/L	0.0002	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 3VA78628.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 13:23:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.020	mg/L	0.0025	U
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-013B

Sample wt/vol: 5000 uL Lab File ID: 3VA78632.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 15:18:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0028	mg/L	0.0025	J
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-020B

Sample wt/vol: 5000 uL Lab File ID: 3VA78633.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 15:46:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.020	mg/L	0.0025	U
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-013B[MS]

Sample wt/vol: 2500 uL Lab File ID: 3VA78634.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 16:14:00

Soil Extract Volume: NA ML Dilution Factor: 2.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0910	mg/L	0.0004	
107-06-2	1,2-Dichloroethane (EDC)	0.110	mg/L	0.0004	
71-43-2	Benzene	0.111	mg/L	0.0005	
56-23-5	Carbon tetrachloride	0.121	mg/L	0.0004	
108-90-7	Chlorobenzene	0.0946	mg/L	0.0005	
67-66-3	Chloroform	0.108	mg/L	0.0003	
78-93-3	Methyl ethyl ketone	0.106	mg/L	0.0049	
127-18-4	Tetrachloroethylene	0.102	mg/L	0.0007	
79-01-6	Trichloroethylene	0.108	mg/L	0.0006	
75-01-4	Vinyl chloride	0.0904	mg/L	0.0003	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-013B[MSD]

Sample wt/vol: 2500 uL Lab File ID: 3VA78635.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 16:43:00

Soil Extract Volume: NA ML Dilution Factor: 2.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0870	mg/L	0.0004	
107-06-2	1,2-Dichloroethane (EDC)	0.110	mg/L	0.0004	
71-43-2	Benzene	0.107	mg/L	0.0005	
56-23-5	Carbon tetrachloride	0.115	mg/L	0.0004	
108-90-7	Chlorobenzene	0.0917	mg/L	0.0005	
67-66-3	Chloroform	0.105	mg/L	0.0003	
78-93-3	Methyl ethyl ketone	0.121	mg/L	0.0049	
127-18-4	Tetrachloroethylene	0.0988	mg/L	0.0007	
79-01-6	Trichloroethylene	0.105	mg/L	0.0006	
75-01-4	Vinyl chloride	0.0902	mg/L	0.0003	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 3VA78644.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 12:46:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	50.9	ug/L	0.3	
71-55-6	1,1,1-Trichloroethane	55.1	ug/L	0.3	
79-34-5	1,1,2,2-Tetrachloroethane	47.7	ug/L	0.5	
79-00-5	1,1,2-Trichloroethane	47.0	ug/L	0.4	
75-34-3	1,1-Dichloroethane	52.2	ug/L	0.2	
75-35-4	1,1-Dichloroethene	43.4	ug/L	0.2	
96-18-4	1,2,3-Trichloropropane	49.1	ug/L	1.8	
120-82-1	1,2,4-Trichlorobenzene	47.8	ug/L	1.6	
95-63-6	1,2,4-Trimethylbenzene	55.3	ug/L	0.4	
96-12-8	1,2-Dibromo-3-chloropropane	57.5	ug/L	0.5	
106-93-4	1,2-Dibromoethane (EDB)	50.7	ug/L	0.3	
95-50-1	1,2-Dichlorobenzene	49.3	ug/L	0.5	
107-06-2	1,2-Dichloroethane (EDC)	51.9	ug/L	0.2	
78-87-5	1,2-Dichloropropane	53.2	ug/L	0.2	
108-67-8	1,3,5-Trimethylbenzene	52.1	ug/L	0.3	
541-73-1	1,3-Dichlorobenzene	48.5	ug/L	0.5	
106-46-7	1,4-Dichlorobenzene	46.0	ug/L	0.6	
78-93-3	2-Butanone (MEK)	52.0	ug/L	2.5	
591-78-6	2-Hexanone (MBK)	53.5	ug/L	3.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	54.4	ug/L	0.7	
67-64-1	Acetone	51.7	ug/L	3.1	
107-02-8	Acrolein	82.9	ug/L	4.2	
107-13-1	Acrylonitrile	54.2	ug/L	2.4	
71-43-2	Benzene	51.9	ug/L	0.2	
74-97-5	Bromochloromethane	53.0	ug/L	0.3	
75-27-4	Bromodichloromethane	52.5	ug/L	0.3	
75-25-2	Bromoform	52.0	ug/L	0.4	
74-83-9	Bromomethane	40.9	ug/L	2.0	
75-15-0	Carbon disulfide	43.7	ug/L	0.2	
56-23-5	Carbon tetrachloride	56.0	ug/L	0.2	
108-90-7	Chlorobenzene	45.5	ug/L	0.3	
75-00-3	Chloroethane	45.9	ug/L	0.8	
67-66-3	Chloroform	51.0	ug/L	0.2	
74-87-3	Chloromethane	46.8	ug/L	0.4	
156-59-2	cis-1,2 dichloroethene	53.5	ug/L	0.3	
10061-01-5	cis-1,3 Dichloropropene	59.6	ug/L	0.2	
124-48-1	Dibromochloromethane	51.0	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 3VA78644.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 12:46:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	49.8	ug/L	0.4	
97-63-2	Ethyl methacrylate	53.8	ug/L	0.4	
100-41-4	Ethylbenzene	50.7	ug/L	0.2	
76-13-1	Freon 113	44.1	ug/L	0.2	
75-71-8	Freon 12	45.7	ug/L	0.3	
74-88-4	Iodomethane	56.4	ug/L	0.7	
98-82-8	Isopropylbenzene	46.1	ug/L	0.2	
1634-04-4	Methyl t-butyl ether (MTBE)	56.9	ug/L	0.5	
75-09-2	Methylene chloride	48.5	ug/L	0.3	
91-20-3	Naphthalene	49.8	ug/L	1.1	
104-51-8	n-Butylbenzene	47.2	ug/L	0.2	
103-65-1	n-Propylbenzene	52.7	ug/L	0.2	
95-47-6	o-Xylene	44.8	ug/L	0.2	
108-38-3/106-42-3	p/m-Xylenes	101	ug/L	0.6	
135-98-8	sec-Butylbenzene	54.9	ug/L	0.2	
100-42-5	Styrene	43.0	ug/L	0.3	
156-60-5	t-1,2 Dichloroethene	51.5	ug/L	0.3	
10061-02-6	t-1,3 Dichloropropene	57.6	ug/L	0.3	
98-06-6	tert-Butylbenzene	53.7	ug/L	0.2	
127-18-4	Tetrachloroethene (PCE)	49.1	ug/L	0.3	
108-88-3	Toluene	47.2	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	53.5	ug/L	0.9	
79-01-6	Trichloroethene	51.7	ug/L	0.3	
75-69-4	Trichlorofluoromethane	97.2	ug/L	0.9	
108-05-4	Vinyl acetate	66.2	ug/L	0.4	
75-01-4	Vinyl chloride	47.6	ug/L	0.2	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 3VA78647.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 14:10:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	3.1	ug/L	3.1	J
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 3VA78647.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 14:10:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-015A

Sample wt/vol: 5000 uL Lab File ID: 3VA78649.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 15:10:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.3	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	2.7	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.5	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.1	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-015A

Sample wt/vol: 5000 uL Lab File ID: 3VA78649.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 15:10:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.6	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-017A

Sample wt/vol: 5000 uL Lab File ID: 3VA78650.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 15:39:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.4	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	3.2	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.8	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.1	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-017A

Sample wt/vol: 5000 uL Lab File ID: 3VA78650.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 15:39:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.8	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-005A

Sample wt/vol: 2500 uL Lab File ID: 3VA78651.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 16:07:00

Soil Extract Volume: NA ML Dilution Factor: 2.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	2.0	ug/L	0.6	U
71-55-6	1,1,1-Trichloroethane	2.0	ug/L	0.7	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	ug/L	1.0	U
79-00-5	1,1,2-Trichloroethane	2.0	ug/L	0.8	U
75-34-3	1,1-Dichloroethane	2.0	ug/L	0.5	U
75-35-4	1,1-Dichloroethene	2.0	ug/L	0.4	U
96-18-4	1,2,3-Trichloropropane	10	ug/L	3.6	U
120-82-1	1,2,4-Trichlorobenzene	10	ug/L	3.3	U
95-63-6	1,2,4-Trimethylbenzene	2.0	ug/L	0.8	U
96-12-8	1,2-Dibromo-3-chloropropane	2.0	ug/L	1.1	U
106-93-4	1,2-Dibromoethane (EDB)	2.0	ug/L	0.5	U
95-50-1	1,2-Dichlorobenzene	2.0	ug/L	1.0	U
107-06-2	1,2-Dichloroethane (EDC)	2.0	ug/L	0.4	U
78-87-5	1,2-Dichloropropane	2.0	ug/L	0.5	U
108-67-8	1,3,5-Trimethylbenzene	2.0	ug/L	0.6	U
541-73-1	1,3-Dichlorobenzene	2.0	ug/L	0.9	U
106-46-7	1,4-Dichlorobenzene	2.0	ug/L	1.2	U
78-93-3	2-Butanone (MEK)	10	ug/L	4.9	U
591-78-6	2-Hexanone (MBK)	10	ug/L	6.3	U
108-10-1	4-Methyl-2-pentanone (MIBK)	2.0	ug/L	1.3	U
67-64-1	Acetone	20	ug/L	6.3	U
107-02-8	Acrolein	40	ug/L	8.5	U
107-13-1	Acrylonitrile	40	ug/L	4.8	U
71-43-2	Benzene	2.0	ug/L	0.5	U
74-97-5	Bromochloromethane	2.0	ug/L	0.6	U
75-27-4	Bromodichloromethane	2.2	ug/L	0.7	
75-25-2	Bromoform	2.0	ug/L	0.8	U
74-83-9	Bromomethane	20	ug/L	4.0	U
75-15-0	Carbon disulfide	10	ug/L	0.5	U
56-23-5	Carbon tetrachloride	2.0	ug/L	0.4	U
108-90-7	Chlorobenzene	2.0	ug/L	0.5	U
75-00-3	Chloroethane	10	ug/L	1.5	U
67-66-3	Chloroform	2.2	ug/L	0.3	
74-87-3	Chloromethane	10	ug/L	0.7	U
156-59-2	cis-1,2 dichloroethene	2.0	ug/L	0.5	U
10061-01-5	cis-1,3 Dichloropropene	2.0	ug/L	0.5	U
124-48-1	Dibromochloromethane	0.8	ug/L	0.5	J

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-005A

Sample wt/vol: 2500 uL Lab File ID: 3VA78651.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 16:07:00

Soil Extract Volume: NA ML Dilution Factor: 2.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	2.0	ug/L	0.8	U
97-63-2	Ethyl methacrylate	10	ug/L	0.8	U
100-41-4	Ethylbenzene	2.0	ug/L	0.5	U
76-13-1	Freon 113	10	ug/L	0.4	U
75-71-8	Freon 12	20	ug/L	0.5	U
1634-04-4	Methyl t-butyl ether (MTBE)	2.0	ug/L	1.0	U
75-09-2	Methylene chloride	20	ug/L	0.6	U
91-20-3	Naphthalene	10	ug/L	2.2	U
95-47-6	o-Xylene	2.0	ug/L	0.5	U
108-38-3/106-42-3	p/m-Xylenes	4.0	ug/L	1.2	U
100-42-5	Styrene	2.0	ug/L	0.6	U
156-60-5	t-1,2 Dichloroethene	2.0	ug/L	0.6	U
10061-02-6	t-1,3 Dichloropropene	2.0	ug/L	0.6	U
127-18-4	Tetrachloroethene (PCE)	2.0	ug/L	0.7	U
108-88-3	Toluene	1.3	ug/L	0.8	J
764-41-0	trans-1,4-Dichloro-2-butene	20	ug/L	1.7	U
79-01-6	Trichloroethene	2.0	ug/L	0.6	U
75-69-4	Trichlorofluoromethane	4.0	ug/L	1.8	U
108-05-4	Vinyl acetate	10	ug/L	0.8	U
75-01-4	Vinyl chloride	2.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 2V091936.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 16:11:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0499	mg/L	0.0002	
107-06-2	1,2-Dichloroethane (EDC)	0.0503	mg/L	0.0002	
71-43-2	Benzene	0.0501	mg/L	0.0002	
56-23-5	Carbon tetrachloride	0.0526	mg/L	0.0002	
108-90-7	Chlorobenzene	0.0514	mg/L	0.0003	
67-66-3	Chloroform	0.0505	mg/L	0.0002	
78-93-3	Methyl ethyl ketone	0.0601	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0517	mg/L	0.0003	
79-01-6	Trichloroethylene	0.0489	mg/L	0.0003	
75-01-4	Vinyl chloride	0.0538	mg/L	0.0002	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-001A

Sample wt/vol: 5000 uL Lab File ID: 3VA78652.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 16:35:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.3	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	2.1	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	2.4	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	0.8	ug/L	0.3	J

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-001A

Sample wt/vol: 5000 uL Lab File ID: 3VA78652.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 16:35:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.3	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-003A

Sample wt/vol: 5000 uL Lab File ID: 3VA78653.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:03:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.4	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	2.9	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.5	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.1	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-003A

Sample wt/vol: 5000 uL Lab File ID: 3VA78653.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:03:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.9	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-008A

Sample wt/vol: 5000 uL Lab File ID: 3VA78654.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:31:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.3	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	2.4	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	2.8	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-008A

Sample wt/vol: 5000 uL Lab File ID: 3VA78654.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:31:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.4	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 2V091939.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:47:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0028	mg/L	0.0025	J
127-18-4	Tetrachloroethylene	0.0004	mg/L	0.0003	J
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-010A

Sample wt/vol: 5000 uL Lab File ID: 3VA78655.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:59:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.3	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.8	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.4	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	0.9	ug/L	0.3	J

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-010A

Sample wt/vol: 5000 uL Lab File ID: 3VA78655.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:59:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.4	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-021B

Sample wt/vol: 5000 uL Lab File ID: 2V091940.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 18:19:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.032	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-024A

Sample wt/vol: 5000 uL Lab File ID: 3VA78656.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 18:27:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.2	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	3.0	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.5	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.1	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-024A

Sample wt/vol: 5000 uL Lab File ID: 3VA78656.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 18:27:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.1	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-026A

Sample wt/vol: 5000 uL Lab File ID: 3VA78657.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 18:55:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.3	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	3.1	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.8	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.1	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-026A

Sample wt/vol: 5000 uL Lab File ID: 3VA78657.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 18:55:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.2	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-012A

Sample wt/vol: 5000 uL Lab File ID: 3VA78662.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 21:16:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	3.1	ug/L	3.1	JB
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.3	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.8	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.6	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	0.8	ug/L	0.3	J

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-012A

Sample wt/vol: 5000 uL Lab File ID: 3VA78662.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 21:16:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	0.6	ug/L	0.6	J
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.6	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB001

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-006B

Sample wt/vol: 5000 uL Lab File ID: 2V091946.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 21:31:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0054	mg/L	0.0025	JB
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-019A

Sample wt/vol: 5000 uL Lab File ID: 3VA78663.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 21:45:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.4	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	3.4	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	4.0	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.2	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-019A

Sample wt/vol: 5000 uL Lab File ID: 3VA78663.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 21:45:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	2.1	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB006

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-029B

Sample wt/vol: 5000 uL Lab File ID: 2V091947.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 22:03:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0042	mg/L	0.0025	JB
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-028A

Sample wt/vol: 5000 uL Lab File ID: 3VA78664.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 22:13:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.4	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	3.5	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	4.4	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.3	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-028A

Sample wt/vol: 5000 uL Lab File ID: 3VA78664.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 22:13:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.4	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-021B[MS]

Sample wt/vol: 5000 uL Lab File ID: 2V091948.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 22:34:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0470	mg/L	0.0002	
107-06-2	1,2-Dichloroethane (EDC)	0.0487	mg/L	0.0002	
71-43-2	Benzene	0.0474	mg/L	0.0002	
56-23-5	Carbon tetrachloride	0.0498	mg/L	0.0002	
108-90-7	Chlorobenzene	0.0472	mg/L	0.0003	
67-66-3	Chloroform	0.0487	mg/L	0.0002	
78-93-3	Methyl ethyl ketone	0.0805	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0463	mg/L	0.0003	
79-01-6	Trichloroethylene	0.0458	mg/L	0.0003	
75-01-4	Vinyl chloride	0.0503	mg/L	0.0002	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-021B[MSD]

Sample wt/vol: 5000 uL Lab File ID: 2V091949.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-21-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 23:06:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0461	mg/L	0.0002	
107-06-2	1,2-Dichloroethane (EDC)	0.0488	mg/L	0.0002	
71-43-2	Benzene	0.0477	mg/L	0.0002	
56-23-5	Carbon tetrachloride	0.0489	mg/L	0.0002	
108-90-7	Chlorobenzene	0.0476	mg/L	0.0003	
67-66-3	Chloroform	0.0481	mg/L	0.0002	
78-93-3	Methyl ethyl ketone	0.0827	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0465	mg/L	0.0003	
79-01-6	Trichloroethylene	0.0455	mg/L	0.0003	
75-01-4	Vinyl chloride	0.0496	mg/L	0.0002	

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-DECON PAD
Laboratory Report Identification: 09050618

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

10 samples were received by Assaigai Analytical Laboratories, Inc. on Friday, May 22, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050618-001A	PNV-L-DECON PAD EB	WATER	VOA
09050618-003A	PNV-L-DECON PAD FB	WATER	VOA
09050618-006B	PNV-L-DECON PAD	TCLP	VOA
09050618-008A	PNV-L-IDW GREY B25 EB	WATER	VOA
09050618-010A	PNV-L-IDW GREY B25 FB	WATER	VOA
09050618-012B	PNV-SO-IDW GREY	TCLP	VOA
09050618-014A	PNV-L-SU1S B002-7 EB	WATER	VOA
09050618-016A	PNV-L-SU1S B002-7 FB	WATER	VOA
09050618-018B	PNV-SO-SU1S B002-7	TCLP	VOA
09050618-020A	PNV-L-SU1S B002-7 TB	WATER	VOA

Preparation Methods and Dates

Preparation Method	Preparation Date
VOCs by SW846 1311/5030B	05-26-2009
VOCs by SW846 1311/5030B	05-27-2009
VOCs by SW846 5030B	05-27-2009
VOCs by SW846 5030B	05-28-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8260C Purgeable VOCs by GC/MS	05-27-2009
8260C Purgeable VOCs by GC/MS	05-28-2009
8260C Purgeable VOCs by GC/MS TCLP	05-26-2009
8260C Purgeable VOCs by GC/MS TCLP	05-27-2009

Comments:

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John W. Biava, Laboratory Manager 06-01-2009 17:15:27

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-017

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sac-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: Assaigai Analytical Laboratory
Project Manager:
Address: 4301 Masthead N.E.
Albuquerque, NM 87109
Phone: 505-345-8964
Fax: 505-345-7259
Email:

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	11:35	PNV-L-SU1SB002-7-052109(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 VHM				
02	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C					X		X	
03	5/21/09	11:35	PNV-L-SU1SB002-7-052109(FIELD BLANK)	1	L	4C		X	X	5-22-09 VHM				
04	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C						X		X
05	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C				X				
06	5/21/09	11:35	PNV-SO-SU1SB002-7-052109(TRIP BLANK)	1	L	4C			X	5-22-09 VHM				
07	5/21/09	12:31	DECON PAD WATER	1	L	4C				X				
08	5/21/09	12:35	DECON PAD EQUIPMENT BLANK	1	L	4C		X	X					
09	5/21/09	12:36	DECON PAD FIELD BLANK	1	L	4C		X	X	5-22-09 VHM				
10	5/21/09	12:30	DECON PAD WATER CONTAINER 1 OF 2	1	L	4C					X		X	
11	5/21/09	12:30	DECON PAD WATER CONTAINER 2 OF 2	1	L	4C						X		X
12	5/21/09	14:10	IDW GREY B25 BOX 1 OF 2	1	S	4C					X		X	
13	5/21/09	14:10	IDW GREY B25 BOX 2 OF 2	1	S	4C						X		X
14	5/21/09	14:12	IDW GREY B25 BOX	1	S	4C				X				
15	5/21/09	14:15	IDW GREY B25 FIELD BLANK	1	L	4C		X	X	5-22-09 VHM				
16	5/21/09	14:16	IDW GREY B25 EQUIPMENT BLANK	1	L	4C		X	X					
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09 Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0087
Samplers Name (Print): Eric Schmitt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	4:10	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	052209	1100
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Cooler temp: 5.0°C

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Mastnead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No.: 09DS0018 Date _____

Page 1 of 2

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature) _____

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP BNA	TCLP PCB	TCLP Total metals	TCLP SVOA			Remarks
0DIA	Decon Pad EB	052109	1235	L	40 mL vial	4°C	HCl	2	X									
0DIA	EB		↓	L	8 oz G		HNO_3	1		X								
0DJA	EB		1236	L	40 mL vial		HCl	2	X									
0DJA	EB		↓	L	8 oz G		HNO_3	1		X								
0DKAB			1231	L	60 mL AG		T	1			X							
0DLAB	↓		1230	L	8 oz G		↓	2				X	X	X	X			
0DMA	IDW Grey BRS EB		1416	L	40 mL vial		HCl	2	X									
0DNA	EB		↓	L	8 oz G		HNO_3	1		X								
0DOA	EB		1415	L	40 mL vial		HCl	2	X									
0DPA	EB		↓	L	8 oz G		HNO_3	1		X								
0DQAB			1412	S	60 mL AG		T	1			X							
0DRAB	↓	↓	1410	S	8 oz G	↓	↓	2				X	X	X	X			Composite

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ❑ Disposed of (additional fee)
- ❑ Stored (30 days max)
- ❑ Stored over 30 days (additional fee)
- ❑ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab job No. 0905U018 Date _____

Page 2 of 2

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

RAS Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. Metals	TCLP VOA	TCLP Pest	TCLP PCB	TCLP SVOA	TCLP SVOA		Remarks
013H	SU15 B002-7 FB	052109	1135	L	40 mL vial	4°C	HCl	2	X								
01UA	FB			L	8 oz G		HNO_3	1		X							
05A	FB			L	40 mL vial		HCl	2	X								
01UA	FB			L	8 oz G		HNO_3	1		X							
01A	TB			L	60 mL AG		T	1	X								
01AB				S				1			X						
01AB				S	8 oz G			2				X	X	X	X		

Relinquished by:
Signature _____
Printed _____
Company _____
Reason _____
Date _____
Time _____

Received by:
Signature _____
Printed _____
Company _____
Reason _____

Relinquished by:
Signature _____
Printed _____
Company _____
Reason _____
Date _____
Time _____

Received by:
Signature _____
Printed _____
Company _____
Reason _____

Method of Shipment _____
Shipment No. _____
Special Instructions: _____

Comments: _____

After analysis, samples are to be:
- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050618

WORKORD	09050618	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?
- ☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Cooler ID	Temperature
ARS01001	5 C

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050618

Date/Time	Assaigai Contact	Client Contact	Details
05-26-09 17:20	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 8260C
Preparatory/Analytical Batch ID:	V09190, V09194

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for target analytes, with the exception of Vinyl acetate, which was outside of QC criteria high. The high vinyl acetate recovery does not affect client samples, as all results for this compound were <MDL.

Quality Control Information:

Method Blank

All laboratory method blanks associated with these analyses were non-detect for target analytes at the CRDL. However, Acetone and Carbon disulfide were detected above the MDL, but below the CRDL in one method blank. All samples associated with the MB were either <MDL and were therefore unaffected, or were flagged with a "B" qualifier to indicate the contamination.

Laboratory Control Sample (LCS)

All LCS/LCSD recoveries were within QC criteria, with the exception of Vinyl acetate in the LCSD. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

All LCS/LCSD RPDs were within QC criteria, with the exception of Acrolein. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

Batch V09190:

2 of 114 MS recoveries were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

1 of 57 MS/MSD RPDs were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

Batch V09194:

0 of 124 MS recoveries were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

5 of 62 MS/MSD RPDs were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

Internal Standards

All internal standards were within method criteria.

Surrogate Standards

All surrogates were within AALI's QC criteria, with the exception of Dibromofluoromethane and Toluene-D8 in the majority of the samples, which were above QC criteria. This is attributed to a change in the QC trend and not to matrix effects.

Miscellaneous:

Please note that the TCLP results are reported in mg/L and Total results are reported in ug/L.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Biava

Date: 6/09/2009

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 1311/8260C
Preparatory/Analytical Batch ID:	V09191, V09192

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for target analytes.

Quality Control Information:

Method Blank

All laboratory method blanks associated with these analyses were non-detect for target analytes at the CRDL. However, Methyl ethyl ketone and Tetrachloroethylene were detected above the MDL, but below the CRDL. All samples associated with the MB were either <MDL and were therefore unaffected, or were flagged with a "B" qualifier to indicate the contamination.

Laboratory Control Sample (LCS)

All LCS recoveries were within QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries and RPDs were within QC criteria.

Internal Standards

All internal standards were within method criteria.

Surrogate Standards

All surrogates were within AALI's QC criteria, with the exception of Dibromofluoromethane and Toluene-D8 in the MS and in the MSD, which were above QC criteria. This is attributed to a change in the QC trend and not to matrix effects.

Miscellaneous:

Please note that the TCLP results are reported in mg/L and Total results are reported in ug/L.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Biava

Date: 6/09/2009

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 3VA78625.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 11:59:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0466	mg/L	0.0002	
107-06-2	1,2-Dichloroethane (EDC)	0.0541	mg/L	0.0002	
71-43-2	Benzene	0.0540	mg/L	0.0002	
56-23-5	Carbon tetrachloride	0.0597	mg/L	0.0002	
108-90-7	Chlorobenzene	0.0474	mg/L	0.0003	
67-66-3	Chloroform	0.0525	mg/L	0.0002	
78-93-3	Methyl ethyl ketone	0.0529	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0516	mg/L	0.0003	
79-01-6	Trichloroethylene	0.0541	mg/L	0.0003	
75-01-4	Vinyl chloride	0.0488	mg/L	0.0002	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 3VA78628.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 13:23:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.020	mg/L	0.0025	U
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-012B

Sample wt/vol: 5000 uL Lab File ID: 3VA78631.D

Level: LOW Date Collected: 05-20-2009 14:12:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-26-2009 14:50:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0002	mg/L	0.0002	J
78-93-3	Methyl ethyl ketone	0.0050	mg/L	0.0025	J
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 3VA78644.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 12:46:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	50.9	ug/L	0.3	
71-55-6	1,1,1-Trichloroethane	55.1	ug/L	0.3	
79-34-5	1,1,2,2-Tetrachloroethane	47.7	ug/L	0.5	
79-00-5	1,1,2-Trichloroethane	47.0	ug/L	0.4	
75-34-3	1,1-Dichloroethane	52.2	ug/L	0.2	
75-35-4	1,1-Dichloroethene	43.4	ug/L	0.2	
96-18-4	1,2,3-Trichloropropane	49.1	ug/L	1.8	
120-82-1	1,2,4-Trichlorobenzene	47.8	ug/L	1.6	
95-63-6	1,2,4-Trimethylbenzene	55.3	ug/L	0.4	
96-12-8	1,2-Dibromo-3-chloropropane	57.5	ug/L	0.5	
106-93-4	1,2-Dibromoethane (EDB)	50.7	ug/L	0.3	
95-50-1	1,2-Dichlorobenzene	49.3	ug/L	0.5	
107-06-2	1,2-Dichloroethane (EDC)	51.9	ug/L	0.2	
78-87-5	1,2-Dichloropropane	53.2	ug/L	0.2	
108-67-8	1,3,5-Trimethylbenzene	52.1	ug/L	0.3	
541-73-1	1,3-Dichlorobenzene	48.5	ug/L	0.5	
106-46-7	1,4-Dichlorobenzene	46.0	ug/L	0.6	
78-93-3	2-Butanone (MEK)	52.0	ug/L	2.5	
591-78-6	2-Hexanone (MBK)	53.5	ug/L	3.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	54.4	ug/L	0.7	
67-64-1	Acetone	51.7	ug/L	3.1	
107-02-8	Acrolein	82.9	ug/L	4.2	
107-13-1	Acrylonitrile	54.2	ug/L	2.4	
71-43-2	Benzene	51.9	ug/L	0.2	
74-97-5	Bromochloromethane	53.0	ug/L	0.3	
75-27-4	Bromodichloromethane	52.5	ug/L	0.3	
75-25-2	Bromoform	52.0	ug/L	0.4	
74-83-9	Bromomethane	40.9	ug/L	2.0	
75-15-0	Carbon disulfide	43.7	ug/L	0.2	
56-23-5	Carbon tetrachloride	56.0	ug/L	0.2	
108-90-7	Chlorobenzene	45.5	ug/L	0.3	
75-00-3	Chloroethane	45.9	ug/L	0.8	
67-66-3	Chloroform	51.0	ug/L	0.2	
74-87-3	Chloromethane	46.8	ug/L	0.4	
156-59-2	cis-1,2 dichloroethene	53.5	ug/L	0.3	
10061-01-5	cis-1,3 Dichloropropene	59.6	ug/L	0.2	
124-48-1	Dibromochloromethane	51.0	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 3VA78644.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 12:46:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	49.8	ug/L	0.4	
97-63-2	Ethyl methacrylate	53.8	ug/L	0.4	
100-41-4	Ethylbenzene	50.7	ug/L	0.2	
76-13-1	Freon 113	44.1	ug/L	0.2	
75-71-8	Freon 12	45.7	ug/L	0.3	
74-88-4	Iodomethane	56.4	ug/L	0.7	
98-82-8	Isopropylbenzene	46.1	ug/L	0.2	
1634-04-4	Methyl t-butyl ether (MTBE)	56.9	ug/L	0.5	
75-09-2	Methylene chloride	48.5	ug/L	0.3	
91-20-3	Naphthalene	49.8	ug/L	1.1	
104-51-8	n-Butylbenzene	47.2	ug/L	0.2	
103-65-1	n-Propylbenzene	52.7	ug/L	0.2	
95-47-6	o-Xylene	44.8	ug/L	0.2	
108-38-3/106-42-3	p/m-Xylenes	101	ug/L	0.6	
135-98-8	sec-Butylbenzene	54.9	ug/L	0.2	
100-42-5	Styrene	43.0	ug/L	0.3	
156-60-5	t-1,2 Dichloroethene	51.5	ug/L	0.3	
10061-02-6	t-1,3 Dichloropropene	57.6	ug/L	0.3	
98-06-6	tert-Butylbenzene	53.7	ug/L	0.2	
127-18-4	Tetrachloroethene (PCE)	49.1	ug/L	0.3	
108-88-3	Toluene	47.2	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	53.5	ug/L	0.9	
79-01-6	Trichloroethene	51.7	ug/L	0.3	
75-69-4	Trichlorofluoromethane	97.2	ug/L	0.9	
108-05-4	Vinyl acetate	66.2	ug/L	0.4	
75-01-4	Vinyl chloride	47.6	ug/L	0.2	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 3VA78647.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 14:10:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	3.1	ug/L	3.1	J
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 3VA78647.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 14:10:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 2V091936.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 16:11:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0499	mg/L	0.0002	
107-06-2	1,2-Dichloroethane (EDC)	0.0503	mg/L	0.0002	
71-43-2	Benzene	0.0501	mg/L	0.0002	
56-23-5	Carbon tetrachloride	0.0526	mg/L	0.0002	
108-90-7	Chlorobenzene	0.0514	mg/L	0.0003	
67-66-3	Chloroform	0.0505	mg/L	0.0002	
78-93-3	Methyl ethyl ketone	0.0601	mg/L	0.0025	
127-18-4	Tetrachloroethylene	0.0517	mg/L	0.0003	
79-01-6	Trichloroethylene	0.0489	mg/L	0.0003	
75-01-4	Vinyl chloride	0.0538	mg/L	0.0002	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 2V091939.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 17:47:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0028	mg/L	0.0025	J
127-18-4	Tetrachloroethylene	0.0004	mg/L	0.0003	J
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU1S B002-7

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-018B

Sample wt/vol: 5000 uL Lab File ID: 2V091941.D

Level: LOW Date Collected: 05-20-2009 14:12:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 18:51:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0002	mg/L	0.0002	J
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0037	mg/L	0.0025	JB
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-001A

Sample wt/vol: 5000 uL Lab File ID: 3VA78658.D

Level: LOW Date Collected: 05-21-2009 12:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 19:24:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-001A

Sample wt/vol: 5000 uL Lab File ID: 3VA78658.D

Level: LOW Date Collected: 05-21-2009 12:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 19:24:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-003A

Sample wt/vol: 5000 uL Lab File ID: 3VA78659.D

Level: LOW Date Collected: 05-21-2009 12:36:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 19:52:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-003A

Sample wt/vol: 5000 uL Lab File ID: 3VA78659.D

Level: LOW Date Collected: 05-21-2009 12:36:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 19:52:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-008A

Sample wt/vol: 5000 uL Lab File ID: 3VA78660.D

Level: LOW Date Collected: 05-21-2009 14:16:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 20:20:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-008A

Sample wt/vol: 5000 uL Lab File ID: 3VA78660.D

Level: LOW Date Collected: 05-21-2009 14:16:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 20:20:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-010A

Sample wt/vol: 5000 uL Lab File ID: 3VA78661.D

Level: LOW Date Collected: 05-21-2009 14:15:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 20:48:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-010A

Sample wt/vol: 5000 uL Lab File ID: 3VA78661.D

Level: LOW Date Collected: 05-21-2009 14:15:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 20:48:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-006B

Sample wt/vol: 5000 uL Lab File ID: 2V091945.D

Level: LOW Date Collected: 05-20-2009 12:31:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 20:59:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
75-35-4	1,1 Dichloroethylene	0.0010	mg/L	0.0002	U
107-06-2	1,2-Dichloroethane (EDC)	0.0020	mg/L	0.0002	U
71-43-2	Benzene	0.0010	mg/L	0.0002	U
56-23-5	Carbon tetrachloride	0.0010	mg/L	0.0002	U
108-90-7	Chlorobenzene	0.0010	mg/L	0.0003	U
67-66-3	Chloroform	0.0010	mg/L	0.0002	U
78-93-3	Methyl ethyl ketone	0.0093	mg/L	0.0025	JB
127-18-4	Tetrachloroethylene	0.0020	mg/L	0.0003	U
79-01-6	Trichloroethylene	0.0010	mg/L	0.0003	U
75-01-4	Vinyl chloride	0.0050	mg/L	0.0002	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-008A[MS]

Sample wt/vol: 1000 uL Lab File ID: 3VA78665.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 22:41:00

Soil Extract Volume: NA ML Dilution Factor: 5.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	260	ug/L	1.6	
71-55-6	1,1,1-Trichloroethane	290	ug/L	1.6	
79-34-5	1,1,2,2-Tetrachloroethane	259	ug/L	2.6	
79-00-5	1,1,2-Trichloroethane	247	ug/L	2.1	
75-34-3	1,1-Dichloroethane	281	ug/L	1.2	
75-35-4	1,1-Dichloroethene	227	ug/L	1.1	
96-18-4	1,2,3-Trichloropropane	251	ug/L	9.1	
120-82-1	1,2,4-Trichlorobenzene	233	ug/L	8.2	
95-63-6	1,2,4-Trimethylbenzene	272	ug/L	2.0	
96-12-8	1,2-Dibromo-3-chloropropane	289	ug/L	2.7	
106-93-4	1,2-Dibromoethane (EDB)	262	ug/L	1.3	
95-50-1	1,2-Dichlorobenzene	249	ug/L	2.5	
107-06-2	1,2-Dichloroethane (EDC)	288	ug/L	1.0	
78-87-5	1,2-Dichloropropane	288	ug/L	1.2	
108-67-8	1,3,5-Trimethylbenzene	259	ug/L	1.6	
541-73-1	1,3-Dichlorobenzene	245	ug/L	2.3	
106-46-7	1,4-Dichlorobenzene	229	ug/L	2.9	
78-93-3	2-Butanone (MEK)	292	ug/L	12	
591-78-6	2-Hexanone (MBK)	288	ug/L	16	
108-10-1	4-Methyl-2-pentanone (MIBK)	308	ug/L	3.4	
67-64-1	Acetone	299	ug/L	16	
107-02-8	Acrolein	435	ug/L	21	
107-13-1	Acrylonitrile	301	ug/L	12	
71-43-2	Benzene	280	ug/L	1.2	
74-97-5	Bromochloromethane	290	ug/L	1.6	
75-27-4	Bromodichloromethane	284	ug/L	1.7	
75-25-2	Bromoform	270	ug/L	2.0	
74-83-9	Bromomethane	194	ug/L	10	
75-15-0	Carbon disulfide	216	ug/L	1.2	
56-23-5	Carbon tetrachloride	297	ug/L	1.1	
108-90-7	Chlorobenzene	234	ug/L	1.4	
75-00-3	Chloroethane	236	ug/L	3.8	
67-66-3	Chloroform	277	ug/L	0.8	
74-87-3	Chloromethane	248	ug/L	1.8	
156-59-2	cis-1,2 dichloroethene	284	ug/L	1.4	
10061-01-5	cis-1,3 Dichloropropene	303	ug/L	1.2	
124-48-1	Dibromochloromethane	267	ug/L	1.4	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-008A[MS]

Sample wt/vol: 1000 uL Lab File ID: 3VA78665.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 22:41:00

Soil Extract Volume: NA ML Dilution Factor: 5.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	277	ug/L	2.0	
97-63-2	Ethyl methacrylate	276	ug/L	2.0	
100-41-4	Ethylbenzene	259	ug/L	1.2	
76-13-1	Freon 113	233	ug/L	0.9	
75-71-8	Freon 12	225	ug/L	1.4	
1634-04-4	Methyl t-butyl ether (MTBE)	303	ug/L	2.6	
75-09-2	Methylene chloride	257	ug/L	1.4	
91-20-3	Naphthalene	249	ug/L	5.5	
95-47-6	o-Xylene	229	ug/L	1.2	
108-38-3/106-42-3	p/m-Xylenes	523	ug/L	3.0	
100-42-5	Styrene	217	ug/L	1.6	
156-60-5	t-1,2 Dichloroethene	270	ug/L	1.4	
10061-02-6	t-1,3 Dichloropropene	285	ug/L	1.6	
127-18-4	Tetrachloroethene (PCE)	246	ug/L	1.6	
108-88-3	Toluene	239	ug/L	1.9	
764-41-0	trans-1,4-Dichloro-2-butene	266	ug/L	4.3	
79-01-6	Trichloroethene	269	ug/L	1.6	
75-69-4	Trichlorofluoromethane	520	ug/L	4.5	
108-05-4	Vinyl acetate	363	ug/L	2.0	
75-01-4	Vinyl chloride	236	ug/L	0.8	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-008A[MSD]

Sample wt/vol: 1000 uL Lab File ID: 3VA78666.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 23:09:00

Soil Extract Volume: NA ML Dilution Factor: 5.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	250	ug/L	1.6	
71-55-6	1,1,1-Trichloroethane	280	ug/L	1.6	
79-34-5	1,1,2,2-Tetrachloroethane	248	ug/L	2.6	
79-00-5	1,1,2-Trichloroethane	238	ug/L	2.1	
75-34-3	1,1-Dichloroethane	273	ug/L	1.2	
75-35-4	1,1-Dichloroethene	220	ug/L	1.1	
96-18-4	1,2,3-Trichloropropane	246	ug/L	9.1	
120-82-1	1,2,4-Trichlorobenzene	231	ug/L	8.2	
95-63-6	1,2,4-Trimethylbenzene	268	ug/L	2.0	
96-12-8	1,2-Dibromo-3-chloropropane	279	ug/L	2.7	
106-93-4	1,2-Dibromoethane (EDB)	253	ug/L	1.3	
95-50-1	1,2-Dichlorobenzene	241	ug/L	2.5	
107-06-2	1,2-Dichloroethane (EDC)	274	ug/L	1.0	
78-87-5	1,2-Dichloropropane	278	ug/L	1.2	
108-67-8	1,3,5-Trimethylbenzene	254	ug/L	1.6	
541-73-1	1,3-Dichlorobenzene	236	ug/L	2.3	
106-46-7	1,4-Dichlorobenzene	224	ug/L	2.9	
78-93-3	2-Butanone (MEK)	271	ug/L	12	
591-78-6	2-Hexanone (MBK)	276	ug/L	16	
108-10-1	4-Methyl-2-pentanone (MIBK)	285	ug/L	3.4	
67-64-1	Acetone	285	ug/L	16	
107-02-8	Acrolein	433	ug/L	21	
107-13-1	Acrylonitrile	289	ug/L	12	
71-43-2	Benzene	270	ug/L	1.2	
74-97-5	Bromochloromethane	275	ug/L	1.6	
75-27-4	Bromodichloromethane	275	ug/L	1.7	
75-25-2	Bromoform	259	ug/L	2.0	
74-83-9	Bromomethane	207	ug/L	10	
75-15-0	Carbon disulfide	207	ug/L	1.2	
56-23-5	Carbon tetrachloride	287	ug/L	1.1	
108-90-7	Chlorobenzene	225	ug/L	1.4	
75-00-3	Chloroethane	238	ug/L	3.8	
67-66-3	Chloroform	266	ug/L	0.8	
74-87-3	Chloromethane	251	ug/L	1.8	
156-59-2	cis-1,2 dichloroethene	276	ug/L	1.4	
10061-01-5	cis-1,3 Dichloropropene	293	ug/L	1.2	
124-48-1	Dibromochloromethane	255	ug/L	1.4	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-008A[MSD]

Sample wt/vol: 1000 uL Lab File ID: 3VA78666.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-27-2009 23:09:00

Soil Extract Volume: NA ML Dilution Factor: 5.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	268	ug/L	2.0	
97-63-2	Ethyl methacrylate	271	ug/L	2.0	
100-41-4	Ethylbenzene	247	ug/L	1.2	
76-13-1	Freon 113	222	ug/L	0.9	
75-71-8	Freon 12	227	ug/L	1.4	
1634-04-4	Methyl t-butyl ether (MTBE)	293	ug/L	2.6	
75-09-2	Methylene chloride	250	ug/L	1.4	
91-20-3	Naphthalene	248	ug/L	5.5	
95-47-6	o-Xylene	222	ug/L	1.2	
108-38-3/106-42-3	p/m-Xylenes	502	ug/L	3.0	
100-42-5	Styrene	210	ug/L	1.6	
156-60-5	t-1,2 Dichloroethene	262	ug/L	1.4	
10061-02-6	t-1,3 Dichloropropene	276	ug/L	1.6	
127-18-4	Tetrachloroethene (PCE)	235	ug/L	1.6	
108-88-3	Toluene	231	ug/L	1.9	
764-41-0	trans-1,4-Dichloro-2-butene	251	ug/L	4.3	
79-01-6	Trichloroethene	260	ug/L	1.6	
75-69-4	Trichlorofluoromethane	497	ug/L	4.5	
108-05-4	Vinyl acetate	348	ug/L	2.0	
75-01-4	Vinyl chloride	243	ug/L	0.8	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 2V091963.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 12:07:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	50.5	ug/L	0.3	
71-55-6	1,1,1-Trichloroethane	49.9	ug/L	0.3	
79-34-5	1,1,2,2-Tetrachloroethane	51.1	ug/L	0.5	
79-00-5	1,1,2-Trichloroethane	50.2	ug/L	0.4	
75-34-3	1,1-Dichloroethane	49.6	ug/L	0.2	
75-35-4	1,1-Dichloroethene	48.8	ug/L	0.2	
96-18-4	1,2,3-Trichloropropane	56.8	ug/L	1.8	
120-82-1	1,2,4-Trichlorobenzene	44.8	ug/L	1.6	
95-63-6	1,2,4-Trimethylbenzene	50.5	ug/L	0.4	
96-12-8	1,2-Dibromo-3-chloropropane	52.8	ug/L	0.5	
106-93-4	1,2-Dibromoethane (EDB)	49.7	ug/L	0.3	
95-50-1	1,2-Dichlorobenzene	51.6	ug/L	0.5	
107-06-2	1,2-Dichloroethane (EDC)	50.6	ug/L	0.2	
78-87-5	1,2-Dichloropropane	49.5	ug/L	0.2	
108-67-8	1,3,5-Trimethylbenzene	49.8	ug/L	0.3	
541-73-1	1,3-Dichlorobenzene	50.2	ug/L	0.5	
106-46-7	1,4-Dichlorobenzene	50.1	ug/L	0.6	
78-93-3	2-Butanone (MEK)	53.5	ug/L	2.5	
591-78-6	2-Hexanone (MBK)	48.2	ug/L	3.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	49.4	ug/L	0.7	
67-64-1	Acetone	49.2	ug/L	3.1	
107-02-8	Acrolein	100	ug/L	4.2	
107-13-1	Acrylonitrile	47.4	ug/L	2.4	
71-43-2	Benzene	49.2	ug/L	0.2	
74-97-5	Bromochloromethane	49.3	ug/L	0.3	
75-27-4	Bromodichloromethane	51.1	ug/L	0.3	
75-25-2	Bromoform	53.4	ug/L	0.4	
74-83-9	Bromomethane	46.6	ug/L	2.0	
75-15-0	Carbon disulfide	46.1	ug/L	0.2	
56-23-5	Carbon tetrachloride	51.3	ug/L	0.2	
108-90-7	Chlorobenzene	49.6	ug/L	0.3	
75-00-3	Chloroethane	49.3	ug/L	0.8	
67-66-3	Chloroform	50.3	ug/L	0.2	
74-87-3	Chloromethane	44.8	ug/L	0.4	
156-59-2	cis-1,2 dichloroethene	50.2	ug/L	0.3	
10061-01-5	cis-1,3 Dichloropropene	51.3	ug/L	0.2	
124-48-1	Dibromochloromethane	51.2	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 5000 uL Lab File ID: 2V091963.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 12:07:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	49.8	ug/L	0.4	
97-63-2	Ethyl methacrylate	52.2	ug/L	0.4	
100-41-4	Ethylbenzene	49.9	ug/L	0.2	
76-13-1	Freon 113	49.0	ug/L	0.2	
75-71-8	Freon 12	50.9	ug/L	0.3	
98-82-8	Isopropylbenzene	50.4	ug/L	0.2	
1634-04-4	Methyl t-butyl ether (MTBE)	47.7	ug/L	0.5	
75-09-2	Methylene chloride	48.0	ug/L	0.3	
91-20-3	Naphthalene	47.9	ug/L	1.1	
104-51-8	n-Butylbenzene	52.3	ug/L	0.2	
103-65-1	n-Propylbenzene	47.5	ug/L	0.2	
95-47-6	o-Xylene	49.8	ug/L	0.2	
108-38-3/106-42-3	p/m-Xylenes	96.9	ug/L	0.6	
135-98-8	sec-Butylbenzene	52.6	ug/L	0.2	
100-42-5	Styrene	51.9	ug/L	0.3	
156-60-5	t-1,2 Dichloroethene	48.5	ug/L	0.3	
10061-02-6	t-1,3 Dichloropropene	51.0	ug/L	0.3	
98-06-6	tert-Butylbenzene	51.6	ug/L	0.2	
127-18-4	Tetrachloroethene (PCE)	49.8	ug/L	0.3	
108-88-3	Toluene	49.5	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	52.9	ug/L	0.9	
79-01-6	Trichloroethene	46.5	ug/L	0.3	
75-69-4	Trichlorofluoromethane	96.8	ug/L	0.9	
108-05-4	Vinyl acetate	74.8	ug/L	0.4	
75-01-4	Vinyl chloride	50.9	ug/L	0.2	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 2V091966.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 13:43:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	1.0	ug/L	0.2	U
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	1.0	ug/L	0.3	U
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	0.3	ug/L	0.2	J
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	1.0	ug/L	0.2	U
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 5000 uL Lab File ID: 2V091966.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 13:43:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	1.0	ug/L	0.2	U
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	1.0	ug/L	0.2	U
108-38-3/106-42-3	p/m-Xylenes	2.0	ug/L	0.6	U
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	1.0	ug/L	0.4	U
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-014A

Sample wt/vol: 5000 uL Lab File ID: 2V091967.D

Level: LOW Date Collected: 05-21-2009 11:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 14:15:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.6	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	2.2	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	2.7	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	0.9	ug/L	0.3	J

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-014A

Sample wt/vol: 5000 uL Lab File ID: 2V091967.D

Level: LOW Date Collected: 05-21-2009 11:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 14:15:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	0.3	ug/L	0.2	J
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	0.2	ug/L	0.2	J
108-38-3/106-42-3	p/m-Xylenes	1.0	ug/L	0.6	J
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	2.6	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-016A

Sample wt/vol: 5000 uL Lab File ID: 2V091968.D

Level: LOW Date Collected: 05-21-2009 11:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 14:47:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.7	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	2.6	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.3	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.1	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-016A

Sample wt/vol: 5000 uL Lab File ID: 2V091968.D

Level: LOW Date Collected: 05-21-2009 11:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 14:47:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	0.3	ug/L	0.2	J
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	0.2	ug/L	0.2	J
108-38-3/106-42-3	p/m-Xylenes	1.2	ug/L	0.6	J
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	3.1	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-020A

Sample wt/vol: 5000 uL Lab File ID: 2V091969.D

Level: LOW Date Collected: 05-21-2009 11:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 15:19:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.0	ug/L	0.3	U
71-55-6	1,1,1-Trichloroethane	1.0	ug/L	0.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ug/L	0.5	U
79-00-5	1,1,2-Trichloroethane	1.0	ug/L	0.4	U
75-34-3	1,1-Dichloroethane	1.0	ug/L	0.2	U
75-35-4	1,1-Dichloroethene	1.0	ug/L	0.2	U
96-18-4	1,2,3-Trichloropropane	5.0	ug/L	1.8	U
120-82-1	1,2,4-Trichlorobenzene	5.0	ug/L	1.6	U
95-63-6	1,2,4-Trimethylbenzene	1.0	ug/L	0.4	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	ug/L	0.5	U
106-93-4	1,2-Dibromoethane (EDB)	1.0	ug/L	0.3	U
95-50-1	1,2-Dichlorobenzene	1.0	ug/L	0.5	U
107-06-2	1,2-Dichloroethane (EDC)	1.0	ug/L	0.2	U
78-87-5	1,2-Dichloropropane	1.0	ug/L	0.2	U
108-67-8	1,3,5-Trimethylbenzene	1.0	ug/L	0.3	U
541-73-1	1,3-Dichlorobenzene	1.0	ug/L	0.5	U
106-46-7	1,4-Dichlorobenzene	1.0	ug/L	0.6	U
78-93-3	2-Butanone (MEK)	5.0	ug/L	2.5	U
591-78-6	2-Hexanone (MBK)	5.0	ug/L	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1.0	ug/L	0.7	U
67-64-1	Acetone	10	ug/L	3.1	U
107-02-8	Acrolein	20	ug/L	4.2	U
107-13-1	Acrylonitrile	20	ug/L	2.4	U
71-43-2	Benzene	0.8	ug/L	0.2	J
74-97-5	Bromochloromethane	1.0	ug/L	0.3	U
75-27-4	Bromodichloromethane	3.0	ug/L	0.3	
75-25-2	Bromoform	1.0	ug/L	0.4	U
74-83-9	Bromomethane	10	ug/L	2.0	U
75-15-0	Carbon disulfide	5.0	ug/L	0.2	U
56-23-5	Carbon tetrachloride	1.0	ug/L	0.2	U
108-90-7	Chlorobenzene	1.0	ug/L	0.3	U
75-00-3	Chloroethane	5.0	ug/L	0.8	U
67-66-3	Chloroform	3.8	ug/L	0.2	
74-87-3	Chloromethane	5.0	ug/L	0.4	U
156-59-2	cis-1,2 dichloroethene	1.0	ug/L	0.3	U
10061-01-5	cis-1,3 Dichloropropene	1.0	ug/L	0.2	U
124-48-1	Dibromochloromethane	1.0	ug/L	0.3	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 TB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-020A

Sample wt/vol: 5000 uL Lab File ID: 2V091969.D

Level: LOW Date Collected: 05-21-2009 11:35:00

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-28-2009 15:19:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	1.0	ug/L	0.4	U
97-63-2	Ethyl methacrylate	5.0	ug/L	0.4	U
100-41-4	Ethylbenzene	0.4	ug/L	0.2	J
76-13-1	Freon 113	5.0	ug/L	0.2	U
75-71-8	Freon 12	10	ug/L	0.3	U
1634-04-4	Methyl t-butyl ether (MTBE)	1.0	ug/L	0.5	U
75-09-2	Methylene chloride	10	ug/L	0.3	U
91-20-3	Naphthalene	5.0	ug/L	1.1	U
95-47-6	o-Xylene	0.3	ug/L	0.2	J
108-38-3/106-42-3	p/m-Xylenes	1.4	ug/L	0.6	J
100-42-5	Styrene	1.0	ug/L	0.3	U
156-60-5	t-1,2 Dichloroethene	1.0	ug/L	0.3	U
10061-02-6	t-1,3 Dichloropropene	1.0	ug/L	0.3	U
127-18-4	Tetrachloroethene (PCE)	1.0	ug/L	0.3	U
108-88-3	Toluene	3.8	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	10	ug/L	0.9	U
79-01-6	Trichloroethene	1.0	ug/L	0.3	U
75-69-4	Trichlorofluoromethane	2.0	ug/L	0.9	U
108-05-4	Vinyl acetate	5.0	ug/L	0.4	U
75-01-4	Vinyl chloride	1.0	ug/L	0.2	U

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCSD

Sample wt/vol: 5000 uL Lab File ID: 2V091988.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-29-2009 7:32:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
630-20-6	1,1,1,2-Tetrachloroethane	52.1	ug/L	0.3	
71-55-6	1,1,1-Trichloroethane	52.3	ug/L	0.3	
79-34-5	1,1,2,2-Tetrachloroethane	52.9	ug/L	0.5	
79-00-5	1,1,2-Trichloroethane	51.2	ug/L	0.4	
75-34-3	1,1-Dichloroethane	51.6	ug/L	0.2	
75-35-4	1,1-Dichloroethene	50.4	ug/L	0.2	
96-18-4	1,2,3-Trichloropropane	49.5	ug/L	1.8	
120-82-1	1,2,4-Trichlorobenzene	42.9	ug/L	1.6	
95-63-6	1,2,4-Trimethylbenzene	52.8	ug/L	0.4	
96-12-8	1,2-Dibromo-3-chloropropane	54.9	ug/L	0.5	
106-93-4	1,2-Dibromoethane (EDB)	52.5	ug/L	0.3	
95-50-1	1,2-Dichlorobenzene	53.3	ug/L	0.5	
107-06-2	1,2-Dichloroethane (EDC)	52.2	ug/L	0.2	
78-87-5	1,2-Dichloropropane	49.1	ug/L	0.2	
108-67-8	1,3,5-Trimethylbenzene	52.6	ug/L	0.3	
541-73-1	1,3-Dichlorobenzene	52.6	ug/L	0.5	
106-46-7	1,4-Dichlorobenzene	52.5	ug/L	0.6	
78-93-3	2-Butanone (MEK)	52.6	ug/L	2.5	
591-78-6	2-Hexanone (MBK)	51.7	ug/L	3.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	53.7	ug/L	0.7	
67-64-1	Acetone	49.7	ug/L	3.1	
107-02-8	Acrolein	69.4	ug/L	4.2	
107-13-1	Acrylonitrile	46.2	ug/L	2.4	
71-43-2	Benzene	50.8	ug/L	0.2	
74-97-5	Bromochloromethane	51.2	ug/L	0.3	
75-27-4	Bromodichloromethane	52.6	ug/L	0.3	
75-25-2	Bromoform	55.5	ug/L	0.4	
74-83-9	Bromomethane	47.1	ug/L	2.0	
75-15-0	Carbon disulfide	43.1	ug/L	0.2	
56-23-5	Carbon tetrachloride	53.0	ug/L	0.2	
108-90-7	Chlorobenzene	51.0	ug/L	0.3	
75-00-3	Chloroethane	49.3	ug/L	0.8	
67-66-3	Chloroform	51.6	ug/L	0.2	
74-87-3	Chloromethane	45.5	ug/L	0.4	
156-59-2	cis-1,2 dichloroethene	52.3	ug/L	0.3	
10061-01-5	cis-1,3 Dichloropropene	52.6	ug/L	0.2	
124-48-1	Dibromochloromethane	52.6	ug/L	0.3	

1A/1B
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: LCSD

Sample wt/vol: 5000 uL Lab File ID: 2V091988.D

Level: LOW Date Collected: NA

% Moisture: NA Date Received: 05-22-2009

GC Column: DB-624 ID: 0.2 mm Date Analyzed: 05-29-2009 7:32:00

Soil Extract Volume: NA ML Dilution Factor: 1.000

Soil Aliquot Volume: NA ML

CAS NO.	COMPOUND			MDL (Adjusted)	Q
74-95-3	Dibromomethane	52.7	ug/L	0.4	
97-63-2	Ethyl methacrylate	53.5	ug/L	0.4	
100-41-4	Ethylbenzene	52.0	ug/L	0.2	
76-13-1	Freon 113	51.4	ug/L	0.2	
75-71-8	Freon 12	50.9	ug/L	0.3	
98-82-8	Isopropylbenzene	52.1	ug/L	0.2	
1634-04-4	Methyl t-butyl ether (MTBE)	48.5	ug/L	0.5	
75-09-2	Methylene chloride	48.5	ug/L	0.3	
91-20-3	Naphthalene	44.9	ug/L	1.1	
104-51-8	n-Butylbenzene	55.2	ug/L	0.2	
103-65-1	n-Propylbenzene	50.1	ug/L	0.2	
95-47-6	o-Xylene	52.0	ug/L	0.2	
108-38-3/106-42-3	p/m-Xylenes	103	ug/L	0.6	
135-98-8	sec-Butylbenzene	54.9	ug/L	0.2	
100-42-5	Styrene	53.2	ug/L	0.3	
156-60-5	t-1,2 Dichloroethene	52.1	ug/L	0.3	
10061-02-6	t-1,3 Dichloropropene	53.1	ug/L	0.3	
98-06-6	tert-Butylbenzene	53.8	ug/L	0.2	
127-18-4	Tetrachloroethene (PCE)	51.3	ug/L	0.3	
108-88-3	Toluene	51.3	ug/L	0.4	
764-41-0	trans-1,4-Dichloro-2-butene	52.7	ug/L	0.9	
79-01-6	Trichloroethene	49.5	ug/L	0.3	
75-69-4	Trichlorofluoromethane	96.9	ug/L	0.9	
108-05-4	Vinyl acetate	76.1	ug/L	0.4	
75-01-4	Vinyl chloride	49.3	ug/L	0.2	

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-SO-SU23SB001
Laboratory Report Identification: 09050616

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

5 samples were received by Assaigai Analytical Laboratories, Inc. on Thursday, May 21, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050616-007B	PNV-SO-SU23SB001	TCLP	SVOA
09050616-014B	PNV-SO-SU23SB002	TCLP	SVOA
09050616-022B	PNV-SO-SU23SB005	TCLP	SVOA
09050616-023B	PNV-SO-SU23SB005 DUP	TCLP	SVOA
09050616-030B	PNV-SO-SU23SB006	TCLP	SVOA

Preparation Methods and Dates

Preparation Method	Preparation Date
TCLP SVOCs by SW846 1311/3510C	05-25-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8270D SVOCs by GC/MS TCLP	05-26-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific require both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 16:55:09

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-010

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@aec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master Lead
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505-3015964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	~~Isotopic Thorium~~	~~Isotopic Uranium~~	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
02	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X				
03	~~5/20/09~~		~~PNV-L-SU23-SB005-52009(TRIP BLANK)~~	1	L	4C								
04	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C					5-22-09	X	X	X
05	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C					X	X	X	X
06	5/20/09		PNV-L-SU23SB005-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09				
07	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X	5-22-09			
08	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C						X	X	X
09	5/20/09		PNV-L-SU23SB005-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09				
10	5/20/09		PNV-L-SU23SB006-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09				
11	5/20/09		PNV-L-SU23SB006-52009 (TRIP BLANK)	1	L	4C			X	5-21-09				
12	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C				X				
13	5/20/09		PNV-L-SU23SB006-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09				
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C					X			X
15	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C					X	X	X	X
16	5/20/09		PNV-L-SU23SB001-52009 (EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09				
17	5/20/09		PNV-SO-SU23SB005-52009 (MS/MSD)	1	S	4C				X	~~X~~	~~5-22-09~~		~~X~~
18	5/20/09		PNV-SO-SU23SB001-52009	1	S	4C						X	X	

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 1Z 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	05-22-09	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-011

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Masthead
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505.345.8964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-L-SU23SB005-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JMM				
02	5/20/09		PNV-L-SU23SB001-52009(FIELD BLANK)	1	L	4C		X	X					
03	5/20/09		PNV-SO0SU23SB001-52009	1	S	4C				X				
04	5/20/09		PNV-L-SU23SB001-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JMM				
05	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
06	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C				X				
07	5/20/09		PNV-L-SU23SB002-52009(FIELD BLANK)	1	L	4C		X	X					
08	5/20/09		PNV-L-SU23SB002-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 JMM				
09	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C				X				
10	5/20/09		PNV-L-SU23SB002-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JMM				
11	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C					X		X	
12	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C						X		X
13	5/20/09		PNV-L-SU23-52009 (TEMPERATURE BLANK)	1	L	4C								
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C						X	X	
15														
16														
17														
18														

Total metals 5-22-09 JMM
VOA EB 5-20-09

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 720 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew D. Eden	052209	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. D9105061lc Date

Page 1 of 3

Client: ARS International

Address:

City / State / Zip:

Project Name / Number:

Contract / Purchase Order / Quote:

Project Manager / Contact:

Telephone No.:

Fax No.:

Samplers: (signature)

Analysis Required

AAIL Fraction Number	Field Sample Number / Location		Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest	TCLP A/B	TCLP TAL metals	TCLP SVOA			Remarks
001A	SU239 B001	FB	052009	7	L	40 mL vial	4°C	HCl	2	X									
002A		FB			L	250 mL AG		HNO_3	1		X								
003A		FB			L	40 mL vial		HCl	2	X									
004A		FB			L	250 mL AG		HNO_3	1		X								
005A		TB			L	60 mL AG		—	1	X									
006AB					S	↓		↓	1			X							
007AB	↓				S	250 mL AG		↓	2				X	X	X	X			
008A	SU239 B002	FB			L	40 mL vial		HCl	2	X									
009BA		FB			L	250 mL AG		HNO_3	1		X								
010C10A		FB			L	40 mL Vial		HCl	2	X									
011D11A		FB			L	250 mL AG		HNO_3	1		X								
012E12A	↓	TB	↓	↓	L	60 mL AG	↓	—		X									

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment:

Shipment No.:

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

4" x" OUTS DMS 052009

Page 1 of 1

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab job No.: 0905016016 Date _____

Page 2 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Gas mobile	TCLP VOA	TCLP BNA	TCLP PEST	TCLP METAL	TCLP SVOA		Remarks
013AB	SU23 B002	052009	T	S	60 mL AG	4°C	T	1			X						
014AB	↓			S	250 mL AG		↓	2				X	X	X	X	X	
015A	SU23 B005 EB			L	40 mL vial		HCl	2	X								
016A	EB			L	250 mL AG		HNO_3	1		X							
017A	FB			L	40 mL vial		HCl	2	X								
018A	FB			L	250 mL AG		HNO_3	1		X							
019A	TB			L	60 mL AG		↓	1	X								
020AB				S				3			X						Include MS/MSD
021AB	DUP			S				1			X						
022AB				S	250 mL AG			4				X	X	X	X		Include MS/MSD
023AB	↓ DUP	↓	↓	S	↓	↓	↓	2				X	X	X	X		

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab Job No. 09050616 Date _____

Page 3 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	Tcle VOA	TCLP Pest	TCLP RCRA	Tcle TAL metals	TCLP SVOA				Remarks
024A	SU239 B006 EB	052008	T	L	40 mL vial	4°C	HCl	2	X										
025A	EB			L	250 mL AG		HNO_3	1		X									
026A	FB			L	40 mL vial		HCl	2	X										
027A	FB			L	250 mL AG		HNO_3	1		X									
028A	TB			L	60 mL AG		T	1	X										
029AB				S				1			X								
030AB				S	250 mL AG			2				X	X	X	X				

Analysis Required

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050616

WORKORD	09050616	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?
- ☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050616

Date/Time	*Assaigai Contact*	*Client Contact*	*Details*
05-26-09 17:21	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW846 1311/3510C/8270D
Preparatory/Analytical Batch ID:	S09233

Method(s):

All analyses were performed utilizing approved methodology.

MS Tune:

The MS Tune met method requirements.

Initial Calibration and Continuing Calibration Verification:

The recoveries of all target analytes were within method criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes at the MDL.

Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD)

All LCS recoveries were within QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries and RPDs were within QC criteria.

Surrogate

All surrogates were within QC criteria.

Internal Standards

All internal standards were within method criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Biers

Date: 6/09/2009

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 1000 ML Lab File ID: MSSV0760.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 12:09:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0050	mg/L	0.00080	U
95-95-4	2,4,5-Trichlorophenol	0.050	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.050	mg/L	0.0022	U
121-14-2	2,4-Dinitrotoluene	0.050	mg/L	0.00053	U
118-74-1	Hexachlorobenzene	0.0050	mg/L	0.00064	U
87-68-3	Hexachlorobutadiene	0.0050	mg/L	0.00076	U
67-72-1	Hexachloroethane	0.0050	mg/L	0.0011	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0050	mg/L	0.0013	U
98-95-3	Nitrobenzene	0.0050	mg/L	0.0013	U
95-48-7	o-Cresol	0.0050	mg/L	0.0018	U
87-86-5	Pentachlorophenol	0.050	mg/L	0.0020	U
110-86-1	Pyridine	0.050	mg/L	0.00072	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 1000 ML Lab File ID: MSSV0762.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 13:05:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0768	mg/L	0.00080	
95-95-4	2,4,5-Trichlorophenol	0.0896	mg/L	0.0014	
88-06-2	2,4,6-Trichlorophenol	0.0900	mg/L	0.0022	
121-14-2	2,4-Dinitrotoluene	0.0916	mg/L	0.00053	
118-74-1	Hexachlorobenzene	0.0593	mg/L	0.00064	
87-68-3	Hexachlorobutadiene	0.0701	mg/L	0.00076	
67-72-1	Hexachloroethane	0.0746	mg/L	0.0011	
108-39-4/106-44-5	m-Cresol & p-Cresol	0.125	mg/L	0.0013	
98-95-3	Nitrobenzene	0.0871	mg/L	0.0013	
95-48-7	o-Cresol	0.0714	mg/L	0.0018	
87-86-5	Pentachlorophenol	0.0639	mg/L	0.0020	
110-86-1	Pyridine	0.0529	mg/L	0.00072	

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-022B

Sample wt/vol: 940 ML Lab File ID: MSSV0764.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 14:01:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0053	mg/L	0.00085	U
95-95-4	2,4,5-Trichlorophenol	0.053	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.053	mg/L	0.0024	U
121-14-2	2,4-Dinitrotoluene	0.053	mg/L	0.00056	U
118-74-1	Hexachlorobenzene	0.0053	mg/L	0.00068	U
87-68-3	Hexachlorobutadiene	0.0053	mg/L	0.00081	U
67-72-1	Hexachloroethane	0.0053	mg/L	0.0012	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0053	mg/L	0.0014	U
98-95-3	Nitrobenzene	0.0053	mg/L	0.0014	U
95-48-7	o-Cresol	0.0053	mg/L	0.0020	U
87-86-5	Pentachlorophenol	0.053	mg/L	0.0021	U
110-86-1	Pyridine	0.053	mg/L	0.00076	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-022B[MS]

Sample wt/vol: 460 ML Lab File ID: MSSV0765.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 14:28:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.158	mg/L	0.0017	
95-95-4	2,4,5-Trichlorophenol	0.190	mg/L	0.0029	
88-06-2	2,4,6-Trichlorophenol	0.192	mg/L	0.0049	
121-14-2	2,4-Dinitrotoluene	0.202	mg/L	0.0012	
118-74-1	Hexachlorobenzene	0.124	mg/L	0.0014	
87-68-3	Hexachlorobutadiene	0.127	mg/L	0.0016	
67-72-1	Hexachloroethane	0.136	mg/L	0.0024	
108-39-4/106-44-5	m-Cresol & p-Cresol	0.251	mg/L	0.0028	
98-95-3	Nitrobenzene	0.183	mg/L	0.0028	
95-48-7	o-Cresol	0.147	mg/L	0.0040	
87-86-5	Pentachlorophenol	0.140	mg/L	0.0043	
110-86-1	Pyridine	0.113	mg/L	0.0016	

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-022B[MSD]

Sample wt/vol: 460 ML Lab File ID: MSSV0766.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 14:56:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.154	mg/L	0.0017	
95-95-4	2,4,5-Trichlorophenol	0.184	mg/L	0.0029	
88-06-2	2,4,6-Trichlorophenol	0.191	mg/L	0.0049	
121-14-2	2,4-Dinitrotoluene	0.188	mg/L	0.0012	
118-74-1	Hexachlorobenzene	0.125	mg/L	0.0014	
87-68-3	Hexachlorobutadiene	0.130	mg/L	0.0016	
67-72-1	Hexachloroethane	0.134	mg/L	0.0024	
108-39-4/106-44-5	m-Cresol & p-Cresol	0.240	mg/L	0.0028	
98-95-3	Nitrobenzene	0.177	mg/L	0.0028	
95-48-7	o-Cresol	0.143	mg/L	0.0040	
87-86-5	Pentachlorophenol	0.141	mg/L	0.0043	
110-86-1	Pyridine	0.109	mg/L	0.0016	J

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB001

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-007B

Sample wt/vol: 910 ML Lab File ID: MSSV0767.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 15:24:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0055	mg/L	0.00088	U
95-95-4	2,4,5-Trichlorophenol	0.055	mg/L	0.0015	U
88-06-2	2,4,6-Trichlorophenol	0.055	mg/L	0.0025	U
121-14-2	2,4-Dinitrotoluene	0.055	mg/L	0.00058	U
118-74-1	Hexachlorobenzene	0.0055	mg/L	0.00070	U
87-68-3	Hexachlorobutadiene	0.0055	mg/L	0.00084	U
67-72-1	Hexachloroethane	0.0055	mg/L	0.0012	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0055	mg/L	0.0014	U
98-95-3	Nitrobenzene	0.0055	mg/L	0.0014	U
95-48-7	o-Cresol	0.0055	mg/L	0.0020	U
87-86-5	Pentachlorophenol	0.055	mg/L	0.0022	U
110-86-1	Pyridine	0.055	mg/L	0.00079	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB00I

Matrix: TCLP Lab Sample ID: 09050616-014B

Sample wt/vol: 950 ML Lab File ID: MSSV0768.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 15:52:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0053	mg/L	0.00084	U
95-95-4	2,4,5-Trichlorophenol	0.053	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.053	mg/L	0.0024	U
121-14-2	2,4-Dinitrotoluene	0.053	mg/L	0.00056	U
118-74-1	Hexachlorobenzene	0.0053	mg/L	0.00067	U
87-68-3	Hexachlorobutadiene	0.0053	mg/L	0.00080	U
67-72-1	Hexachloroethane	0.0053	mg/L	0.0012	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0053	mg/L	0.0014	U
98-95-3	Nitrobenzene	0.0053	mg/L	0.0014	U
95-48-7	o-Cresol	0.0053	mg/L	0.0019	U
87-86-5	Pentachlorophenol	0.053	mg/L	0.0021	U
110-86-1	Pyridine	0.053	mg/L	0.00076	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-023B

Sample wt/vol: 950 ML Lab File ID: MSSV0769.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 16:20:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0053	mg/L	0.00084	U
95-95-4	2,4,5-Trichlorophenol	0.053	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.053	mg/L	0.0024	U
121-14-2	2,4-Dinitrotoluene	0.053	mg/L	0.00056	U
118-74-1	Hexachlorobenzene	0.0053	mg/L	0.00067	U
87-68-3	Hexachlorobutadiene	0.0053	mg/L	0.00080	U
67-72-1	Hexachloroethane	0.0053	mg/L	0.0012	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0053	mg/L	0.0014	U
98-95-3	Nitrobenzene	0.0053	mg/L	0.0014	U
95-48-7	o-Cresol	0.0053	mg/L	0.0019	U
87-86-5	Pentachlorophenol	0.053	mg/L	0.0021	U
110-86-1	Pyridine	0.053	mg/L	0.00076	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB006

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-030B

Sample wt/vol: 940 ML Lab File ID: MSSV0770.D

Level: LOW Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 16:48:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0053	mg/L	0.00085	U
95-95-4	2,4,5-Trichlorophenol	0.053	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.053	mg/L	0.0024	U
121-14-2	2,4-Dinitrotoluene	0.053	mg/L	0.00056	U
118-74-1	Hexachlorobenzene	0.0053	mg/L	0.00068	U
87-68-3	Hexachlorobutadiene	0.0053	mg/L	0.00081	U
67-72-1	Hexachloroethane	0.0053	mg/L	0.0012	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0053	mg/L	0.0014	U
98-95-3	Nitrobenzene	0.0053	mg/L	0.0014	U
95-48-7	o-Cresol	0.0053	mg/L	0.0020	U
87-86-5	Pentachlorophenol	0.053	mg/L	0.0021	U
110-86-1	Pyridine	0.053	mg/L	0.00076	U

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-DECON PAD
Laboratory Report Identification: 09050618

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

3 samples were received by Assaigai Analytical Laboratories, Inc. on Friday, May 22, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050618-007B	PNV-L-DECON PAD	TCLP	SVOA
09050618-013A	PNV-SO-IDW GREY	SOLID	SVOA
09050618-019B	PNV-SO-SU1S B002-7	TCLP	SVOA

Preparation Methods and Dates

Preparation Method	Preparation Date
SVOCs in Soil by SW846 3550B	05-26-2009
TCLP SVOCs by SW846 1311/3510C	05-25-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8270D SVOCs by GC/MS	05-28-2009
8270D SVOCs by GC/MS TCLP	05-26-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 17:12:21

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-017

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

Sent To: Assaigai Analytical Laboratory
Project Manager:
Address: 4301 Masthead N.E.
Albuquerque, NM 87109
Phone: 505-345-8964
Fax: 505-345-7259
Email:

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

5-22-09 Total Metals 2MM
VOAs

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	11:35	PNV-L-SU1SB002-7-052109(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 2MM				
02	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C					X		X	
03	5/21/09	11:35	PNV-L-SU1SB002-7-052109(FIELD BLANK)	1	L	4C		X	X	5-22-09 2MM				
04	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C						X		X
05	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C				X				
06	5/21/09	11:35	PNV-SO-SU1SB002-7-052109(TRIP BLANK)	1	L	4C			X	5-22-09 2MM				
07	5/21/09	12:31	DECON PAD WATER	1	L	4C				X				
08	5/21/09	12:35	DECON PAD EQUIPMENT BLANK	1	L	4C		X	X	5-22-09 2MM				
09	5/21/09	12:36	DECON PAD FIELD BLANK	1	L	4C		X	X					
10	5/21/09	12:30	DECON PAD WATER CONTAINER 1 OF 2	1	L	4C					X		X	
11	5/21/09	12:30	DECON PAD WATER CONTAINER 2 OF 2	1	L	4C						X		X
12	5/21/09	14:10	IDW GREY B25 BOX 1 OF 2	1	S	4C					X		X	
13	5/21/09	14:10	IDW GREY B25 BOX 2 OF 2	1	S	4C						X		X
14	5/21/09	14:12	IDW GREY B25 BOX	1	S	4C				X				
15	5/21/09	14:15	IDW GREY B25 FIELD BLANK	1	L	4C		X	X	5-22-09 2MM				
16	5/21/09	14:16	IDW GREY B25 EQUIPMENT BLANK	1	L	4C		X	X					
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0087
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	4:10	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	052209	1100
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Cooler temp: 5.0°C

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Mastnead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: 09DS12018 Date

Page 1 of 2

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

ARS Freedom Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Pot. metals	TCLP VOA	TCLP Pest	TCLP PCB	TCLP TAL metals	TCLP SVOA			Remarks
001A	Decon Pad EB	052109	1235	L	40 mL vial	4°C	HCl	2	X									
001A	EB		↓	L	8 oz G		HNO_3	1		X								
002A	EB		1236	L	40 mL vial		HCl	2	X									
002A	EB		↓	L	8 oz G		HNO_3	1		X								
002AB			1231	L	60 mL AG		T	1			X							
002AB	↓		1230	L	8 oz G		↓	2				X	X	X	X			
005A	IDW Grey BRS EB		1416	L	40 mL vial		HCl	2	X									
005A	EB		↓	L	8 oz G		HNO_3	1		X								
006A	EB		1415	L	40 mL vial		HCl	2	X									
006A	EB		↓	L	8 oz G		HNO_3	1		X								
006AB			1412	S	60 mL AG		T	1			X							
006AB	↓	↓	1410	S	8 oz G	↓	↓	2				X	X	X	X			Composite

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No. 0905U618 Date

Page 2 of 2

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	RCLP Pest.	TCLP PCB	TCLP TAL metals	TCLP SVOA		Remarks
013H	SU15 8002-7 FB	052109	1135	L	40 mL vial	4°C	HCl	2	X								
013A	FB			L	8 oz G		HNO_3	1		X							
015A	FB			L	40 mL vial		HCl	2	X								
016A	FB			L	8 oz G		HNO_3	1		X							
017A	TB			L	60 mL AG		T	1	X								
018AB				S	↓		T	1			X						
019ABD				S	8 oz G			2				X	X	X	X		

OFFICE

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Page 4 of 3/5

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050618

WORKORD	09050618	RECEIPT	05/22/09
CLIENT ID	ARS01	RECEIVED BY	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?
- ☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Cooler ID	Temperature
ARS01001	5 C

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050618

Date/Time	Assaigai Contact	Client Contact	Details
05-26-09 17:20	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 3550B/8270D
Preparatory/Analytical Batch ID:	S09239

Method(s):

All analyses were performed utilizing approved methodology.

MS Tune:

The MS Tune met method requirements.

Initial Calibration and Continuing Calibration Verification:

The recoveries of all target analytes were within method criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes at the MDL.

Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD)

All LCS recoveries were within QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

3 of 134 MS recoveries were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

3 of 67 MS/MSD RPDs were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

Surrogate

All surrogates were within QC criteria.

Internal Standards

All internal standards were within method criteria.

Miscellaneous:

Sample PNV-SO-IDW GREY was analyzed on a total basis (as a solid) rather than a TCLP basis due to insufficient sample provided by the client for the TCLP analysis.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

Date: 6/09/2009

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 1311/3510C/8270D
Preparatory/Analytical Batch ID:	S09233

Method(s):

All analyses were performed utilizing approved methodology.

MS Tune:

The MS Tune met method requirements.

Initial Calibration and Continuing Calibration Verification:

The recoveries of all target analytes were within method criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes at the MDL.

Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD)

All LCS recoveries were within QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries and RPDs were within QC criteria.

Surrogate

All surrogates were within QC criteria.

Internal Standards

All internal standards were within method criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Briggs

Date: 6/09/2009

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 1000 ML Lab File ID: MSSV0760.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 12:09:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0050	mg/L	0.00080	U
95-95-4	2,4,5-Trichlorophenol	0.050	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.050	mg/L	0.0022	U
121-14-2	2,4-Dinitrotoluene	0.050	mg/L	0.00053	U
118-74-1	Hexachlorobenzene	0.0050	mg/L	0.00064	U
87-68-3	Hexachlorobutadiene	0.0050	mg/L	0.00076	U
67-72-1	Hexachloroethane	0.0050	mg/L	0.0011	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0050	mg/L	0.0013	U
98-95-3	Nitrobenzene	0.0050	mg/L	0.0013	U
95-48-7	o-Cresol	0.0050	mg/L	0.0018	U
87-86-5	Pentachlorophenol	0.050	mg/L	0.0020	U
110-86-1	Pyridine	0.050	mg/L	0.00072	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 1000 ML Lab File ID: MSSV0762.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 13:05:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0768	mg/L	0.00080	
95-95-4	2,4,5-Trichlorophenol	0.0896	mg/L	0.0014	
88-06-2	2,4,6-Trichlorophenol	0.0900	mg/L	0.0022	
121-14-2	2,4-Dinitrotoluene	0.0916	mg/L	0.00053	
118-74-1	Hexachlorobenzene	0.0593	mg/L	0.00064	
87-68-3	Hexachlorobutadiene	0.0701	mg/L	0.00076	
67-72-1	Hexachloroethane	0.0746	mg/L	0.0011	
108-39-4/106-44-5	m-Cresol & p-Cresol	0.125	mg/L	0.0013	
98-95-3	Nitrobenzene	0.0871	mg/L	0.0013	
95-48-7	o-Cresol	0.0714	mg/L	0.0018	
87-86-5	Pentachlorophenol	0.0639	mg/L	0.0020	
110-86-1	Pyridine	0.0529	mg/L	0.00072	

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-007B

Sample wt/vol: 180 ML Lab File ID: MSSV0771.D

Level: LOW Date Collected: 05-20-2009 12:30:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 17:15:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.028	mg/L	0.0044	U
95-95-4	2,4,5-Trichlorophenol	0.28	mg/L	0.0075	U
88-06-2	2,4,6-Trichlorophenol	0.28	mg/L	0.012	U
121-14-2	2,4-Dinitrotoluene	0.28	mg/L	0.0029	U
118-74-1	Hexachlorobenzene	0.028	mg/L	0.0036	U
87-68-3	Hexachlorobutadiene	0.028	mg/L	0.0042	U
67-72-1	Hexachloroethane	0.028	mg/L	0.0062	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.028	mg/L	0.0073	U
98-95-3	Nitrobenzene	0.028	mg/L	0.0073	U
95-48-7	o-Cresol	0.028	mg/L	0.010	U
87-86-5	Pentachlorophenol	0.28	mg/L	0.011	U
110-86-1	Pyridine	0.28	mg/L	0.0040	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU1S B002-7

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-019B

Sample wt/vol: 970 ML Lab File ID: MSSV0772.D

Level: LOW Date Collected: 05-20-2009 11:35:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-25-2009

Injection Volume: 1 uL Date Analyzed: 05-26-2009 17:43:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) TSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
106-46-7	1,4-Dichlorobenzene	0.0052	mg/L	0.00082	U
95-95-4	2,4,5-Trichlorophenol	0.052	mg/L	0.0014	U
88-06-2	2,4,6-Trichlorophenol	0.052	mg/L	0.0023	U
121-14-2	2,4-Dinitrotoluene	0.052	mg/L	0.00055	U
118-74-1	Hexachlorobenzene	0.0052	mg/L	0.00066	U
87-68-3	Hexachlorobutadiene	0.0052	mg/L	0.00078	U
67-72-1	Hexachloroethane	0.0052	mg/L	0.0011	U
108-39-4/106-44-5	m-Cresol & p-Cresol	0.0052	mg/L	0.0014	U
98-95-3	Nitrobenzene	0.0052	mg/L	0.0014	U
95-48-7	o-Cresol	0.0052	mg/L	0.0019	U
87-86-5	Pentachlorophenol	0.052	mg/L	0.0020	U
110-86-1	Pyridine	0.052	mg/L	0.00074	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: MB

Sample wt/vol: 30 G Lab File ID: MSSV0784.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 11:00:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
120-82-1	1,2,4-Trichlorobenzene	0.03	mg/Kg	0.01	U
95-50-1	1,2-Dichlorobenzene	0.03	mg/Kg	0.01	U
541-73-1	1,3-Dichlorobenzene	0.03	mg/Kg	0.01	U
106-46-7	1,4-Dichlorobenzene	0.03	mg/Kg	0.01	U
90-12-0	1-Methylnaphthalene	0.03	mg/Kg	0.01	U
58-90-2	2,3,4,6-Tetrachlorophenol	1.5	mg/Kg	0.01	U
95-95-4	2,4,5-Trichlorophenol	0.30	mg/Kg	0.02	U
88-06-2	2,4,6-Trichlorophenol	0.30	mg/Kg	0.01	U
120-83-2	2,4-Dichlorophenol	0.30	mg/Kg	0.01	U
105-67-9	2,4-Dimethylphenol	0.03	mg/Kg	0.02	U
51-28-5	2,4-Dinitrophenol	0.67	mg/Kg	0.01	U
121-14-2	2,4-Dinitrotoluene	0.30	mg/Kg	0.007	U
606-20-2	2,6-Dinitrotoluene	0.30	mg/Kg	0.01	U
91-58-7	2-Chloronaphthalene	0.030	mg/Kg	0.008	U
95-57-8	2-Chlorophenol	0.03	mg/Kg	0.02	U
91-57-6	2-Methylnaphthalene	0.030	mg/Kg	0.009	U
95-48-7	2-Methylphenol	0.10	mg/Kg	0.04	U
88-74-4	2-Nitroaniline	0.30	mg/Kg	0.02	U
88-75-5	2-Nitrophenol	0.30	mg/Kg	0.03	U
91-94-1	3,3-Dichlorobenzidine	0.30	mg/Kg	0.02	U
108-39-4/106-44-5	3+4 Methylphenol	0.10	mg/Kg	0.03	U
99-09-2	3-Nitroaniline	0.30	mg/Kg	0.02	U
534-52-1	4,6-Dinitro-2-methylphenol	0.30	mg/Kg	0.03	U
101-55-3	4-Bromophenyl phenyl ether	0.030	mg/Kg	0.010	U
59-50-7	4-Chloro-3-methylphenol	0.30	mg/Kg	0.01	U
106-47-8	4-Chloroaniline	0.30	mg/Kg	0.006	U
7005-72-3	4-Chlorophenyl phenyl ether	0.03	mg/Kg	0.01	U
100-01-6	4-Nitroaniline	0.30	mg/Kg	0.02	U
100-02-7	4-Nitrophenol	0.60	mg/Kg	0.02	U
83-32-9	Acenaphthene	0.03	mg/Kg	0.01	U
208-96-8	Acenaphthylene	0.030	mg/Kg	0.010	U
62-53-3	Aniline	0.30	mg/Kg	0.03	U
120-12-7	Anthracene	0.03	mg/Kg	0.01	U
103-33-3/122-66-7	Azobenzene&1,2-Diphenylhydrazine	0.030	mg/Kg	0.010	U
56-55-3	Benzo (a) anthracene	0.030	mg/Kg	0.007	U
50-32-8	Benzo(a)pyrene	0.03	mg/Kg	0.02	U
205-99-2	Benzo(b)fluoranthene	0.03	mg/Kg	0.01	U
191-24-2	Benzo(g,h,i)perylene	0.30	mg/Kg	0.01	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: MB

Sample wt/vol: 30 G Lab File ID: MSSV0784.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 11:00:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
207-08-9	Benzo(k)fluoranthene	0.03	mg/Kg	0.01	U
64-85-0	Benzoic acid	3.00	mg/Kg	0.12	U
100-51-6	Benzyl alcohol	1.5	mg/Kg	0.02	U
111-44-4	bis (2-Chloroethyl) ether	0.030	mg/Kg	0.020	U
111-91-1	bis(2-Chloroethoxy)methane	0.03	mg/Kg	0.01	U
108-60-1	bis(2-Chloroisopropyl)ether	0.10	mg/Kg	0.03	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.014	mg/Kg	0.006	J
85-68-7	Butylbenzylphthalate	0.030	mg/Kg	0.006	U
218-01-9	Chrysene	0.030	mg/Kg	0.008	U
53-70-3	Dibenz(a,h)anthracene	0.30	mg/Kg	0.01	U
132-64-9	Dibenzofuran	0.030	mg/Kg	0.004	U
84-66-2	Diethylphthalate	0.030	mg/Kg	0.007	U
131-11-3	Dimethylphthalate	0.030	mg/Kg	0.008	U
84-74-2	di-n-Butylphthalate	0.30	mg/Kg	0.003	U
117-84-0	di-n-Octylphthalate	0.30	mg/Kg	0.006	U
206-44-0	Fluoranthene	0.030	mg/Kg	0.007	U
86737	Fluorene	0.03	mg/Kg	0.01	U
118-74-1	Hexachlorobenzene	0.03	mg/Kg	0.02	U
87-68-3	Hexachlorobutadiene	0.030	mg/Kg	0.009	U
77-47-4	Hexachlorocyclopentadiene	1.5	mg/Kg	0.01	U
67-72-1	Hexachloroethane	0.03	mg/Kg	0.01	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.30	mg/Kg	0.010	U
78-59-1	Isophorone	0.03	mg/Kg	0.01	U
91-20-3	Naphthalene	0.030	mg/Kg	0.008	U
98-95-3	Nitrobenzene	0.030	mg/Kg	0.010	U
62-75-9	n-Nitroso-dimethyl-amine	0.30	mg/Kg	0.02	U
621-64-7	n-Nitroso-di-n-propylamine	0.03	mg/Kg	0.02	U
86-30-6	n-Nitrosodiphenylamine	0.03	mg/Kg	0.02	U
87-86-5	Pentachlorophenol	1.3	mg/Kg	0.01	U
85-01-8	Phenanthrene	0.030	mg/Kg	0.009	U
108-95-2	Phenol	0.30	mg/Kg	0.02	U
129-00-0	Pyrene	0.030	mg/Kg	0.007	U
110-86-1	Pyridine	0.30	mg/Kg	0.01	U

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: LCS

Sample wt/vol: 30 G Lab File ID: MSSV0790.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 13:48:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
120-82-1	1,2,4-Trichlorobenzene	1.19	mg/Kg	0.01	
95-50-1	1,2-Dichlorobenzene	1.09	mg/Kg	0.01	
541-73-1	1,3-Dichlorobenzene	1.08	mg/Kg	0.01	
106-46-7	1,4-Dichlorobenzene	1.09	mg/Kg	0.01	
58-90-2	2,3,4,6-Tetrachlorophenol	1.33	mg/Kg	0.01	J
95-95-4	2,4,5-Trichlorophenol	1.22	mg/Kg	0.02	
88-06-2	2,4,6-Trichlorophenol	1.19	mg/Kg	0.01	
120-83-2	2,4-Dichlorophenol	1.20	mg/Kg	0.01	
105-67-9	2,4-Dimethylphenol	0.590	mg/Kg	0.02	
51-28-5	2,4-Dinitrophenol	0.732	mg/Kg	0.01	
121-14-2	2,4-Dinitrotoluene	1.27	mg/Kg	0.007	
606-20-2	2,6-Dinitrotoluene	1.32	mg/Kg	0.01	
91-58-7	2-Chloronaphthalene	1.17	mg/Kg	0.008	
95-57-8	2-Chlorophenol	1.11	mg/Kg	0.02	
91-57-6	2-Methylnaphthalene	1.17	mg/Kg	0.009	
95-48-7	2-Methylphenol	1.07	mg/Kg	0.04	
88-74-4	2-Nitroaniline	1.24	mg/Kg	0.02	
88-75-5	2-Nitrophenol	1.14	mg/Kg	0.03	
108-39-4/106-44-5	3+4 Methylphenol	1.93	mg/Kg	0.03	
99-09-2	3-Nitroaniline	1.53	mg/Kg	0.02	
534-52-1	4,6-Dinitro-2-methylphenol	1.10	mg/Kg	0.03	
101-55-3	4-Bromophenyl phenyl ether	1.18	mg/Kg	0.010	
59-50-7	4-Chloro-3-methylphenol	1.20	mg/Kg	0.01	
106-47-8	4-Chloroaniline	1.01	mg/Kg	0.006	
7005-72-3	4-Chlorophenyl phenyl ether	1.25	mg/Kg	0.01	
100-01-6	4-Nitroaniline	1.94	mg/Kg	0.02	
100-02-7	4-Nitrophenol	1.13	mg/Kg	0.02	
83-32-9	Acenaphthene	1.22	mg/Kg	0.01	
208-96-8	Acenaphthylene	1.12	mg/Kg	0.010	
62-53-3	Aniline	0.868	mg/Kg	0.03	
120-12-7	Anthracene	1.25	mg/Kg	0.01	
103-33-3/122-66-7	Azobenzene&1,2-Diphenylhydrazine	1.02	mg/Kg	0.010	
56-55-3	Benzo (a) anthracene	1.26	mg/Kg	0.007	
50-32-8	Benzo(a)pyrene	1.18	mg/Kg	0.02	
205-99-2	Benzo(b)fluoranthene	1.30	mg/Kg	0.01	
191-24-2	Benzo(g,h,i)perylene	1.19	mg/Kg	0.01	
207-08-9	Benzo(k)fluoranthene	1.27	mg/Kg	0.01	
100-51-6	Benzyl alcohol	1.15	mg/Kg	0.02	J

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: LCS

Sample wt/vol: 30 G Lab File ID: MSSV0790.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 13:48:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
111-44-4	bis (2-Chloroethyl) ether	1.08	mg/Kg	0.020	
111-91-1	bis(2-Chloroethoxy)methane	1.12	mg/Kg	0.01	
108-60-1	bis(2-Chloroisopropyl)ether	1.02	mg/Kg	0.03	
117-81-7	bis(2-Ethylhexyl)phthalate	1.19	mg/Kg	0.006	
85-68-7	Butylbenzylphthalate	1.16	mg/Kg	0.006	
218-01-9	Chrysene	1.29	mg/Kg	0.008	
53-70-3	Dibenz(a,h)anthracene	1.18	mg/Kg	0.01	
132-64-9	Dibenzofuran	1.19	mg/Kg	0.004	
84-66-2	Diethylphthalate	1.24	mg/Kg	0.007	
131-11-3	Dimethylphthalate	1.24	mg/Kg	0.008	
84-74-2	di-n-Butylphthalate	1.17	mg/Kg	0.003	
117-84-0	di-n-Octylphthalate	1.11	mg/Kg	0.006	
206-44-0	Fluoranthene	1.23	mg/Kg	0.007	
86737	Fluorene	1.27	mg/Kg	0.01	
118-74-1	Hexachlorobenzene	1.24	mg/Kg	0.02	
87-68-3	Hexachlorobutadiene	1.20	mg/Kg	0.009	
77-47-4	Hexachlorocyclopentadiene	0.903	mg/Kg	0.01	J
67-72-1	Hexachloroethane	1.05	mg/Kg	0.01	
193-39-5	Indeno(1,2,3-cd)pyrene	1.19	mg/Kg	0.010	
78-59-1	Isophorone	1.03	mg/Kg	0.01	
91-20-3	Naphthalene	1.17	mg/Kg	0.008	
98-95-3	Nitrobenzene	1.11	mg/Kg	0.010	
62-75-9	n-Nitroso-dimethyl-amine	0.925	mg/Kg	0.02	
621-64-7	n-Nitroso-di-n-propylamine	1.07	mg/Kg	0.02	
86-30-6	n-Nitrosodiphenylamine	1.67	mg/Kg	0.02	
87-86-5	Pentachlorophenol	0.861	mg/Kg	0.01	J
85-01-8	Phenanthrene	1.19	mg/Kg	0.009	
108-95-2	Phenol	1.17	mg/Kg	0.02	
129-00-0	Pyrene	1.31	mg/Kg	0.007	

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A

Sample wt/vol: 2.5 G Lab File ID: MSSV0797.D

Level: LOW Date Collected: 05-20-2009 14:10:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:02:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
120-82-1	1,2,4-Trichlorobenzene	0.36	mg/Kg	0.12	U
95-50-1	1,2-Dichlorobenzene	0.36	mg/Kg	0.12	U
541-73-1	1,3-Dichlorobenzene	0.36	mg/Kg	0.12	U
106-46-7	1,4-Dichlorobenzene	0.36	mg/Kg	0.12	U
90-12-0	1-Methylnaphthalene	3.2	mg/Kg	0.12	
58-90-2	2,3,4,6-Tetrachlorophenol	18	mg/Kg	0.12	U
95-95-4	2,4,5-Trichlorophenol	3.6	mg/Kg	0.24	U
88-06-2	2,4,6-Trichlorophenol	3.6	mg/Kg	0.12	U
120-83-2	2,4-Dichlorophenol	3.6	mg/Kg	0.12	U
105-67-9	2,4-Dimethylphenol	0.36	mg/Kg	0.24	U
51-28-5	2,4-Dinitrophenol	8.0	mg/Kg	0.12	U
121-14-2	2,4-Dinitrotoluene	3.6	mg/Kg	0.084	U
606-20-2	2,6-Dinitrotoluene	3.6	mg/Kg	0.12	U
91-58-7	2-Chloronaphthalene	0.36	mg/Kg	0.096	U
95-57-8	2-Chlorophenol	0.36	mg/Kg	0.24	U
91-57-6	2-Methylnaphthalene	1.9	mg/Kg	0.11	
95-48-7	2-Methylphenol	1.2	mg/Kg	0.48	U
88-74-4	2-Nitroaniline	3.6	mg/Kg	0.24	U
88-75-5	2-Nitrophenol	3.6	mg/Kg	0.36	U
91-94-1	3,3-Dichlorobenzidine	3.6	mg/Kg	0.24	U
108-39-4/106-44-5	3+4 Methylphenol	1.2	mg/Kg	0.36	U
99-09-2	3-Nitroaniline	3.6	mg/Kg	0.24	U
534-52-1	4,6-Dinitro-2-methylphenol	3.6	mg/Kg	0.36	U
101-55-3	4-Bromophenyl phenyl ether	0.36	mg/Kg	0.12	U
59-50-7	4-Chloro-3-methylphenol	3.6	mg/Kg	0.12	U
106-47-8	4-Chloroaniline	3.6	mg/Kg	0.072	U
7005-72-3	4-Chlorophenyl phenyl ether	0.36	mg/Kg	0.12	U
100-01-6	4-Nitroaniline	3.6	mg/Kg	0.24	U
100-02-7	4-Nitrophenol	7.2	mg/Kg	0.24	U
83-32-9	Acenaphthene	0.71	mg/Kg	0.12	
208-96-8	Acenaphthylene	0.36	mg/Kg	0.12	U
62-53-3	Aniline	3.6	mg/Kg	0.36	U
120-12-7	Anthracene	0.36	mg/Kg	0.12	
103-33-3/122-66-7	Azobenzene&1,2-Diphenylhydrazine	0.36	mg/Kg	0.12	U
56-55-3	Benzo (a) anthracene	0.36	mg/Kg	0.084	U
50-32-8	Benzo(a)pyrene	0.36	mg/Kg	0.24	U
205-99-2	Benzo(b)fluoranthene	0.36	mg/Kg	0.12	U
191-24-2	Benzo(g,h,i)perylene	0.14	mg/Kg	0.12	J

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A

Sample wt/vol: 2.5 G Lab File ID: MSSV0797.D

Level: LOW Date Collected: 05-20-2009 14:10:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:02:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
207-08-9	Benzo(k)fluoranthene	0.36	mg/Kg	0.12	U
64-85-0	Benzoic acid	36.0	mg/Kg	1.44	U
100-51-6	Benzyl alcohol	18	mg/Kg	0.24	U
111-44-4	bis (2-Chloroethyl) ether	0.36	mg/Kg	0.24	U
111-91-1	bis(2-Chloroethoxy)methane	0.36	mg/Kg	0.12	U
108-60-1	bis(2-Chloroisopropyl)ether	1.2	mg/Kg	0.36	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.7	mg/Kg	0.072	
85-68-7	Butylbenzylphthalate	0.36	mg/Kg	0.072	U
218-01-9	Chrysene	0.36	mg/Kg	0.096	U
53-70-3	Dibenz(a,h)anthracene	3.6	mg/Kg	0.12	U
132-64-9	Dibenzofuran	0.34	mg/Kg	0.048	J
84-66-2	Diethylphthalate	0.36	mg/Kg	0.084	U
131-11-3	Dimethylphthalate	0.36	mg/Kg	0.096	U
84-74-2	di-n-Butylphthalate	0.28	mg/Kg	0.036	J
117-84-0	di-n-Octylphthalate	3.6	mg/Kg	0.072	U
206-44-0	Fluoranthene	0.24	mg/Kg	0.084	J
86737	Fluorene	0.90	mg/Kg	0.12	
118-74-1	Hexachlorobenzene	0.36	mg/Kg	0.24	U
87-68-3	Hexachlorobutadiene	0.36	mg/Kg	0.11	U
77-47-4	Hexachlorocyclopentadiene	18	mg/Kg	0.12	U
67-72-1	Hexachloroethane	0.36	mg/Kg	0.12	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.6	mg/Kg	0.12	U
78-59-1	Isophorone	0.36	mg/Kg	0.12	U
91-20-3	Naphthalene	0.48	mg/Kg	0.096	
98-95-3	Nitrobenzene	0.36	mg/Kg	0.12	U
62-75-9	n-Nitroso-dimethyl-amine	3.6	mg/Kg	0.24	U
621-64-7	n-Nitroso-di-n-propylamine	0.36	mg/Kg	0.24	U
86-30-6	n-Nitrosodiphenylamine	0.36	mg/Kg	0.24	U
87-86-5	Pentachlorophenol	16	mg/Kg	0.12	U
85-01-8	Phenanthrene	1.2	mg/Kg	0.11	
108-95-2	Phenol	3.6	mg/Kg	0.24	U
129-00-0	Pyrene	0.46	mg/Kg	0.084	
110-86-1	Pyridine	3.6	mg/Kg	0.12	U

Report Date: 6/1/2009 5:12:26 PM

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MS]

Sample wt/vol: 2.5 G Lab File ID: MSSV0798.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:30:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
120-82-1	1,2,4-Trichlorobenzene	14.5	mg/Kg	0.12	
95-50-1	1,2-Dichlorobenzene	13.2	mg/Kg	0.12	
541-73-1	1,3-Dichlorobenzene	12.5	mg/Kg	0.12	
106-46-7	1,4-Dichlorobenzene	12.7	mg/Kg	0.12	
58-90-2	2,3,4,6-Tetrachlorophenol	16.4	mg/Kg	0.12	J
95-95-4	2,4,5-Trichlorophenol	15.5	mg/Kg	0.24	
88-06-2	2,4,6-Trichlorophenol	15.4	mg/Kg	0.12	
120-83-2	2,4-Dichlorophenol	15.1	mg/Kg	0.12	
105-67-9	2,4-Dimethylphenol	14.3	mg/Kg	0.24	
51-28-5	2,4-Dinitrophenol	10.2	mg/Kg	0.12	
121-14-2	2,4-Dinitrotoluene	16.5	mg/Kg	0.084	
606-20-2	2,6-Dinitrotoluene	16.3	mg/Kg	0.12	
91-58-7	2-Chloronaphthalene	14.4	mg/Kg	0.096	
95-57-8	2-Chlorophenol	13.4	mg/Kg	0.24	
91-57-6	2-Methylnaphthalene	16.9	mg/Kg	0.11	
95-48-7	2-Methylphenol	13.8	mg/Kg	0.48	
88-74-4	2-Nitroaniline	14.9	mg/Kg	0.24	
88-75-5	2-Nitrophenol	14.3	mg/Kg	0.36	
108-39-4/106-44-5	3+4 Methylphenol	24.8	mg/Kg	0.36	
99-09-2	3-Nitroaniline	13.9	mg/Kg	0.24	
534-52-1	4,6-Dinitro-2-methylphenol	11.2	mg/Kg	0.36	
101-55-3	4-Bromophenyl phenyl ether	15.0	mg/Kg	0.12	
59-50-7	4-Chloro-3-methylphenol	14.9	mg/Kg	0.12	
106-47-8	4-Chloroaniline	7.44	mg/Kg	0.072	
7005-72-3	4-Chlorophenyl phenyl ether	15.3	mg/Kg	0.12	
100-01-6	4-Nitroaniline	19.5	mg/Kg	0.24	
100-02-7	4-Nitrophenol	13.1	mg/Kg	0.24	
83-32-9	Acenaphthene	15.6	mg/Kg	0.12	
208-96-8	Acenaphthylene	14.3	mg/Kg	0.12	
62-53-3	Aniline	5.90	mg/Kg	0.36	
120-12-7	Anthracene	15.5	mg/Kg	0.12	
103-33-3/122-66-7	Azobenzene&1,2-Diphenylhydrazine	12.3	mg/Kg	0.12	
56-55-3	Benzo (a) anthracene	15.3	mg/Kg	0.084	
50-32-8	Benzo(a)pyrene	14.7	mg/Kg	0.24	
205-99-2	Benzo(b)fluoranthene	15.9	mg/Kg	0.12	
191-24-2	Benzo(g,h,i)perylene	12.8	mg/Kg	0.12	
207-08-9	Benzo(k)fluoranthene	13.9	mg/Kg	0.12	
100-51-6	Benzyl alcohol	13.4	mg/Kg	0.24	J

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MS]

Sample wt/vol: 2.5 G Lab File ID: MSSV0798.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:30:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
111-44-4	bis (2-Chloroethyl) ether	12.6	mg/Kg	0.24	
111-91-1	bis(2-Chloroethoxy)methane	13.4	mg/Kg	0.12	
108-60-1	bis(2-Chloroisopropyl)ether	11.9	mg/Kg	0.36	
117-81-7	bis(2-Ethylhexyl)phthalate	17.0	mg/Kg	0.072	
85-68-7	Butylbenzylphthalate	13.9	mg/Kg	0.072	
218-01-9	Chrysene	15.8	mg/Kg	0.096	
53-70-3	Dibenz(a,h)anthracene	13.5	mg/Kg	0.12	
132-64-9	Dibenzofuran	14.6	mg/Kg	0.048	
84-66-2	Diethylphthalate	15.2	mg/Kg	0.084	
131-11-3	Dimethylphthalate	15.2	mg/Kg	0.096	
84-74-2	di-n-Butylphthalate	14.0	mg/Kg	0.036	
117-84-0	di-n-Octylphthalate	15.0	mg/Kg	0.072	
206-44-0	Fluoranthene	14.5	mg/Kg	0.084	
86737	Fluorene	16.7	mg/Kg	0.12	
118-74-1	Hexachlorobenzene	15.6	mg/Kg	0.24	
87-68-3	Hexachlorobutadiene	14.5	mg/Kg	0.11	
77-47-4	Hexachlorocyclopentadiene	6.12	mg/Kg	0.12	J
67-72-1	Hexachloroethane	12.4	mg/Kg	0.12	
193-39-5	Indeno(1,2,3-cd)pyrene	13.3	mg/Kg	0.12	
78-59-1	Isophorone	12.4	mg/Kg	0.12	
91-20-3	Naphthalene	14.6	mg/Kg	0.096	
98-95-3	Nitrobenzene	13.4	mg/Kg	0.12	
62-75-9	n-Nitroso-dimethyl-amine	11.3	mg/Kg	0.24	
621-64-7	n-Nitroso-di-n-propylamine	13.6	mg/Kg	0.24	
86-30-6	n-Nitrosodiphenylamine	24.5	mg/Kg	0.24	
87-86-5	Pentachlorophenol	13.9	mg/Kg	0.12	J
85-01-8	Phenanthrene	15.5	mg/Kg	0.11	
108-95-2	Phenol	13.5	mg/Kg	0.24	
129-00-0	Pyrene	15.9	mg/Kg	0.084	

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MSD]

Sample wt/vol: 2.5 G Lab File ID: MSSV0799.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:58:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
120-82-1	1,2,4-Trichlorobenzene	15.0	mg/Kg	0.12	
95-50-1	1,2-Dichlorobenzene	13.4	mg/Kg	0.12	
541-73-1	1,3-Dichlorobenzene	13.0	mg/Kg	0.12	
106-46-7	1,4-Dichlorobenzene	13.4	mg/Kg	0.12	
58-90-2	2,3,4,6-Tetrachlorophenol	17.1	mg/Kg	0.12	J
95-95-4	2,4,5-Trichlorophenol	16.0	mg/Kg	0.24	
88-06-2	2,4,6-Trichlorophenol	16.5	mg/Kg	0.12	
120-83-2	2,4-Dichlorophenol	15.4	mg/Kg	0.12	
105-67-9	2,4-Dimethylphenol	15.2	mg/Kg	0.24	
51-28-5	2,4-Dinitrophenol	8.82	mg/Kg	0.12	
121-14-2	2,4-Dinitrotoluene	16.0	mg/Kg	0.084	
606-20-2	2,6-Dinitrotoluene	16.7	mg/Kg	0.12	
91-58-7	2-Chloronaphthalene	15.1	mg/Kg	0.096	
95-57-8	2-Chlorophenol	13.8	mg/Kg	0.24	
91-57-6	2-Methylnaphthalene	16.7	mg/Kg	0.11	
95-48-7	2-Methylphenol	14.5	mg/Kg	0.48	
88-74-4	2-Nitroaniline	15.9	mg/Kg	0.24	
88-75-5	2-Nitrophenol	14.9	mg/Kg	0.36	
108-39-4/106-44-5	3+4 Methylphenol	25.7	mg/Kg	0.36	
99-09-2	3-Nitroaniline	15.0	mg/Kg	0.24	
534-52-1	4,6-Dinitro-2-methylphenol	9.04	mg/Kg	0.36	
101-55-3	4-Bromophenyl phenyl ether	15.6	mg/Kg	0.12	
59-50-7	4-Chloro-3-methylphenol	15.6	mg/Kg	0.12	
106-47-8	4-Chloroaniline	8.08	mg/Kg	0.072	
7005-72-3	4-Chlorophenyl phenyl ether	16.2	mg/Kg	0.12	
100-01-6	4-Nitroaniline	22.8	mg/Kg	0.24	
100-02-7	4-Nitrophenol	14.5	mg/Kg	0.24	
83-32-9	Acenaphthene	16.3	mg/Kg	0.12	
208-96-8	Acenaphthylene	14.6	mg/Kg	0.12	
62-53-3	Aniline	6.22	mg/Kg	0.36	
120-12-7	Anthracene	15.8	mg/Kg	0.12	
103-33-3/122-66-7	Azobenzene&1,2-Diphenylhydrazine	12.9	mg/Kg	0.12	
56-55-3	Benzo (a) anthracene	16.0	mg/Kg	0.084	
50-32-8	Benzo(a)pyrene	14.7	mg/Kg	0.24	
205-99-2	Benzo(b)fluoranthene	15.8	mg/Kg	0.12	
191-24-2	Benzo(g,h,i)perylene	13.3	mg/Kg	0.12	
207-08-9	Benzo(k)fluoranthene	15.8	mg/Kg	0.12	
100-51-6	Benzyl alcohol	14.3	mg/Kg	0.24	J

1C/1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MSD]

Sample wt/vol: 2.5 G Lab File ID: MSSV0799.D

Level: LOW Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 2 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:58:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) SMSSVOA

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
111-44-4	bis (2-Chloroethyl) ether	13.6	mg/Kg	0.24	
111-91-1	bis(2-Chloroethoxy)methane	14.3	mg/Kg	0.12	
108-60-1	bis(2-Chloroisopropyl)ether	12.6	mg/Kg	0.36	
117-81-7	bis(2-Ethylhexyl)phthalate	17.1	mg/Kg	0.072	
85-68-7	Butylbenzylphthalate	14.4	mg/Kg	0.072	
218-01-9	Chrysene	16.2	mg/Kg	0.096	
53-70-3	Dibenz(a,h)anthracene	14.1	mg/Kg	0.12	
132-64-9	Dibenzofuran	15.1	mg/Kg	0.048	
84-66-2	Diethylphthalate	15.8	mg/Kg	0.084	
131-11-3	Dimethylphthalate	15.6	mg/Kg	0.096	
84-74-2	di-n-Butylphthalate	14.3	mg/Kg	0.036	
117-84-0	di-n-Octylphthalate	16.0	mg/Kg	0.072	
206-44-0	Fluoranthene	15.2	mg/Kg	0.084	
86737	Fluorene	17.5	mg/Kg	0.12	
118-74-1	Hexachlorobenzene	16.1	mg/Kg	0.24	
87-68-3	Hexachlorobutadiene	15.2	mg/Kg	0.11	
77-47-4	Hexachlorocyclopentadiene	5.05	mg/Kg	0.12	J
67-72-1	Hexachloroethane	12.5	mg/Kg	0.12	
193-39-5	Indeno(1,2,3-cd)pyrene	13.8	mg/Kg	0.12	
78-59-1	Isophorone	13.2	mg/Kg	0.12	
91-20-3	Naphthalene	15.3	mg/Kg	0.096	
98-95-3	Nitrobenzene	13.9	mg/Kg	0.12	
62-75-9	n-Nitroso-dimethyl-amine	11.9	mg/Kg	0.24	
621-64-7	n-Nitroso-di-n-propylamine	14.0	mg/Kg	0.24	
86-30-6	n-Nitrosodiphenylamine	24.1	mg/Kg	0.24	
87-86-5	Pentachlorophenol	13.8	mg/Kg	0.12	J
85-01-8	Phenanthrene	15.7	mg/Kg	0.11	
108-95-2	Phenol	14.2	mg/Kg	0.24	
129-00-0	Pyrene	16.1	mg/Kg	0.084	

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-SO-SU23SB001
Laboratory Report Identification: 09050616

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

5 samples were received by Assaigai Analytical Laboratories, Inc. on Thursday, May 21, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050616-007B	PNV-SO-SU23SB001	TCLP	Pesticides
09050616-007B	PNV-SO-SU23SB001	WATER	Pesticides
09050616-014B	PNV-SO-SU23SB002	TCLP	Pesticides
09050616-014B	PNV-SO-SU23SB002	WATER	Pesticides
09050616-022B	PNV-SO-SU23SB005	TCLP	Pesticides
09050616-022B	PNV-SO-SU23SB005	WATER	Pesticides
09050616-023B	PNV-SO-SU23SB005 DUP	TCLP	Pesticides
09050616-023B	PNV-SO-SU23SB005 DUP	WATER	Pesticides
09050616-030B	PNV-SO-SU23SB006	TCLP	Pesticides
09050616-030B	PNV-SO-SU23SB006	WATER	Pesticides

Preparation Methods and Dates

Preparation Method	Preparation Date
PCBs by SW846 3510C	05-26-2009
TCLP Pesticides by SW846 3510C	05-26-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8081A Pesticides by GC/ECD TCLP	05-27-2009
8081A Pesticides by GC/ECD TCLP	05-28-2009
8082 PCBs by GC/ECD	05-28-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 16:54:27

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-010

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Ass Argi
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master Loop
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505-345 9464
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

5-20-09 VM
Total Metals
VOA
5-20-09

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	~~Isotopic Thorium~~	~~Isotopic Uranium~~	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
02	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X				
03	~~5/20/09~~		~~PNV-L-SU23-SB005-52009(TRIP BLANK)~~	~~1~~	~~L~~	~~4C~~								
04	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C					5-22-09 VM	X	X	X
06	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C					X	X	X	X
06	5/20/09		PNV-L-SU23SB005-52009 (FIELD BLANK) 5-22-09 VM	1	L	4C		X	X	5-21-09 VM				
07	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X	5-22-09 VM			
08	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C						X	X	X
09	5/20/09		PNV-L-SU23SB005-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VM				
10	5/20/09		PNV-L-SU23SB006-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 VM				
11	5/20/09		PNV-L-SU23SB006-52009 (TRIP BLANK)	1	L	4C			X	5-21-09 VM				
12	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C				X				
13	5/20/09		PNV-L-SU23SB006-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VM				
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C					X			X
15	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C					X	X	X	X
16	5/20/09		PNV-L-SU23SB001-52009 (EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VM				
17	5/20/09		PNV-SO-SU23SB005-52009 (MS/MSD)	1	S	4C				X	X 5-22-09 VM			X 5-22-09 VM
18	5/20/09		PNV-SO-SU23SB001-52009	1	S	4C						X	X	

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-20-09 Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	05-22-09	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-011

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: elombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master head
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505. 345. 8964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

5-22-09 Total Metals
5-20-09 VOA

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-L-SU23SB005-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JHM				
02	5/20/09		PNV-L-SU23SB001-52009(FIELD BLANK)	1	L	4C		X	X					
03	5/20/09		PNV-SO0SU23SB001-52009	1	S	4C				X				
04	5/20/09		PNV-L-SU23SB001-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JHM				
05	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
06	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C				X				
07	5/20/09		PNV-L-SU23SB002-52009(FIELD BLANK)	1	L	4C		X	X					
08	5/20/09		PNV-L-SU23SB002-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 JHM				
09	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C				X				
10	5/20/09		PNV-L-SU23SB002-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JHM				
11	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C					X		X	
12	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C						X		X
13	5/20/09		PNV-L-SU23-52009 (TEMPERATURE BLANK)	1	L	4C								
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C						X	X	
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew D. Eden	052209	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. D9105026116 Date

Page 1 of 3

Client: ARS International

Address:

City / State / Zip:

Project Name / Number:

Contract / Purchase Order / Quote:

Project Manager / Contact:

Telephone No.:

Fax No.:

Samplers: (signature)

Analysis Required

AALI Freezon Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. Metals	TCLP Metals	TCLP VOA	TCLP Pest.	TCLP BNA	TCLP Total Metals	TCLP SVOA		Remarks
001A	SU239 B001 EB	052009	7	L	40 mL vial	4°C	HCl	2	X									
002A	EB			L	250 mL AG		HNO_3	1		X								
003A	EB			L	40 mL vial		HCl	2	X									
004A	EB			L	250 mL AG		HNO_3	1		X								
005A	TB			L	60 mL AG		—	1	X									
006AB				S	↓		↓	1			X							
007AB	↓			S	250 mL AG		↓	2				X	X	X	X			
008A	SU239 B002 EB			L	40 mL vial		HCl	2	X									
009BGA	EB			L	250 mL AG		HNO_3	1		X								
010FC10A	EB			L	40 mL Vial		HCl	2	X									
011D11A	EB			L	250 mL AG		HNO_3	1		X								
012E12A	↓ TB	↓	↓	L	60 mL AG	↓	—		X									

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment:

Shipment No.:

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

4" X" OUTS DMS 052009

Page 1 of 3

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: 0905016016 Date

Page 2 of 3

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

AAL Collection Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. petrole	TCLP VOA	TCLP Bsd	TCLP PCB	TCLP Metals	TCLP SVOA	Remarks
013AB	SU23 B005	052009	T	S	60 mL AG	4°C	T	1			X					
014AB	↓	↓	↓	S	250 mL AG	↓	↓	2				X	X	X	X	X
015A	SU23 B005 FB			L	40 mL vial		HCl	2	X							
016A	FB			L	250 mL AG		HNO_3	1		X						
017A	FB			L	40 mL vial		HCl	2	X							
018A	FB			L	250 mL AG		HNO_3	1		X						
019A	TB			L	60 mL AG			1	X							
020AB				S	↓			3			X					Include MS/MSD
021AB	DUP			S				1			X					
022AB				S	250 mL AG			4				X	X	X	X	Include MS/MSD
023AB	DUP	↓	↓	S	↓	↓	↓	2				X	X	X	X	

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ❑ Disposed of (additional fee)
- ❑ Stored (30 days max)
- ❑ Stored over 30 days (additional fee)
- ❑ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No. 09DSD616 Date

Page 3 of 3

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

AAL Position Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tech. methods	TCLP VOA	TCLP Pest	TCLP 2 PCB	TCLP Tal metals	TCLP SVOA		Remarks
024A	SU235 B006 EB	052008	T	L	40 mL vial	4°C	HCl	2	X								
025A	EB			L	250 mL AG		HNO_3	1		X							
026A	FB			L	40 mL vial		HCl	2	X								
027A	FB			L	250 mL AG		HNO_3	1		X							
028A	TB			L	60 mL AG		T	1	X								
029AB				S				1			X						
030AB				S	250 mL AG			2				X	X	X	X		

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050616

WORKORD	09050616	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?
- ☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050616

Date/Time	*Assaigai Contact*	*Client Contact*	*Details*
05-26-09 17:21	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW846 8081A
Preparatory/Analytical Batch ID:	S09237

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All ICV and CCV recoveries were within QC criteria on the primary column.

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes.

Laboratory Control Sample (LCS)

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries and RPDs were within QC criteria.

Surrogate

All surrogate recoveries were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

Date: 06/09/2009

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 1000 ML Lab File ID: 2PC0034.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 21:20:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0025	mg/L	0.00014	U
72-20-8	Endrin	0.0010	mg/L	0.00005	U
76-44-8	Heptachlor	0.0010	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0010	mg/L	0.00004	U
58-89-9	Lindane	0.0010	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0010	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0025	mg/L	0.0001	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 1000 ML Lab File ID: 2PC0035.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 21:40:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
72-20-8	Endrin	0.000403	mg/L	0.00005	J
76-44-8	Heptachlor	0.000316	mg/L	0.00002	J
1024-57-3	Heptachlor Epoxide	0.000340	mg/L	0.00004	J
58-89-9	Lindane	0.000350	mg/L	0.00006	J
72-43-5	Methoxychlor	0.000451	mg/L	0.00004	J

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-022B

Sample wt/vol: 930 ML Lab File ID: 2PC0036.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 22:01:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0027	mg/L	0.00015	U
72-20-8	Endrin	0.0011	mg/L	0.00005	U
76-44-8	Heptachlor	0.0011	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0011	mg/L	0.00004	U
58-89-9	Lindane	0.0011	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0011	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0027	mg/L	0.0001	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-022B[MS]

Sample wt/vol: 450 ML Lab File ID: 2PC0037.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 22:21:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
72-20-8	Endrin	0.000679	mg/L	0.00011	J
76-44-8	Heptachlor	0.000594	mg/L	0.00004	J
1024-57-3	Heptachlor Epoxide	0.000633	mg/L	0.00009	J
58-89-9	Lindane	0.000647	mg/L	0.00013	J
72-43-5	Methoxychlor	0.000774	mg/L	0.00009	J

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-022B[MSD]

Sample wt/vol: 450 ML Lab File ID: 2PC0038.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 22:41:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
72-20-8	Endrin	0.000708	mg/L	0.00011	J
76-44-8	Heptachlor	0.000616	mg/L	0.00004	J
1024-57-3	Heptachlor Epoxide	0.000639	mg/L	0.00009	J
58-89-9	Lindane	0.000653	mg/L	0.00013	J
72-43-5	Methoxychlor	0.000828	mg/L	0.00009	J

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB001

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-007B

Sample wt/vol: 910 ML Lab File ID: 2PC0039.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 23:01:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0027	mg/L	0.00015	U
72-20-8	Endrin	0.0011	mg/L	0.00005	U
76-44-8	Heptachlor	0.0011	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0011	mg/L	0.00004	U
58-89-9	Lindane	0.0011	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0011	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0027	mg/L	0.0001	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-014B

Sample wt/vol: 880 ML Lab File ID: 2PC0042.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-28-2009 0:02:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0028	mg/L	0.00016	U
72-20-8	Endrin	0.0011	mg/L	0.00006	U
76-44-8	Heptachlor	0.0011	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0011	mg/L	0.00004	U
58-89-9	Lindane	0.0011	mg/L	0.00007	U
72-43-5	Methoxychlor	0.0011	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0028	mg/L	0.0001	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-023B

Sample wt/vol: 930 ML Lab File ID: 2PC0043.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-28-2009 0:22:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0027	mg/L	0.00015	U
72-20-8	Endrin	0.0011	mg/L	0.00005	U
76-44-8	Heptachlor	0.0011	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0011	mg/L	0.00004	U
58-89-9	Lindane	0.0011	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0011	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0027	mg/L	0.0001	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB006

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: TCLP Lab Sample ID: 09050616-030B

Sample wt/vol: 920 ML Lab File ID: 2PC0044.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-28-2009 0:42:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0027	mg/L	0.00015	U
72-20-8	Endrin	0.0011	mg/L	0.00005	U
76-44-8	Heptachlor	0.0011	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0011	mg/L	0.00004	U
58-89-9	Lindane	0.0011	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0011	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0027	mg/L	0.0001	U

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-DECON PAD
Laboratory Report Identification: 09050618

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

3 samples were received by Assaigai Analytical Laboratories, Inc. on Friday, May 22, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050618-007B	PNV-L-DECON PAD	TCLP	Pesticides
09050618-007B	PNV-L-DECON PAD	WATER	Pesticides
09050618-013A	PNV-SO-IDW GREY	SOLID	Pesticides
09050618-019B	PNV-SO-SU1S B002-7	TCLP	Pesticides
09050618-019B	PNV-SO-SU1S B002-7	WATER	Pesticides

Preparation Methods and Dates

Preparation Method	Preparation Date
PCBs by SW846 3510C	05-26-2009
PCBs in solids by SW846 3550B	05-23-2009
Pesticides in Soil by SW846 3550B	05-23-2009
TCLP Pesticides by SW846 3510C	05-26-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8081A Pesticides by GC/ECD	05-27-2009
8081A Pesticides by GC/ECD TCLP	05-28-2009
8082 PCBs by GC/ECD	05-28-2009
8082 PCBs by GC/ECD	05-29-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 17:07:52

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-017

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: Assaigai Analytical Laboratory
Project Manager:
Address: 4301 Masthead N.E.
Albuquerque, NM 87109
Phone: 505-345-8964
Fax: 505-345-7259
Email:

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	11:35	PNV-L-SU1SB002-7-052109(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 VHM				
02	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C					X		X	
03	5/21/09	11:35	PNV-L-SU1SB002-7-052109(FIELD BLANK)	1	L	4C		X	X	5-22-09 VHM				
04	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C						X		X
05	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C				X				
06	5/21/09	11:35	PNV-SO-SU1SB002-7-052109(TRIP BLANK)	1	L	4C			X	5-22-09 VHM				
07	5/21/09	12:31	DECON PAD WATER	1	L	4C				X				
08	5/21/09	12:35	DECON PAD EQUIPMENT BLANK	1	L	4C		X	X	5-22-09 VHM				
09	5/21/09	12:36	DECON PAD FIELD BLANK	1	L	4C		X	X					
10	5/21/09	12:30	DECON PAD WATER CONTAINER 1 OF 2	1	L	4C					X		X	
11	5/21/09	12:30	DECON PAD WATER CONTAINER 2 OF 2	1	L	4C						X		X
12	5/21/09	14:10	IDW GREY B25 BOX 1 OF 2	1	S	4C					X		X	
13	5/21/09	14:10	IDW GREY B25 BOX 2 OF 2	1	S	4C						X		X
14	5/21/09	14:12	IDW GREY B25 BOX	1	S	4C				X				
15	5/21/09	14:15	IDW GREY B25 FIELD BLANK	1	L	4C		X	X	5-22-09 VHM				
16	5/21/09	14:16	IDW GREY B25 EQUIPMENT BLANK	1	L	4C		X	X					
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0087
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	4:10	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	052209	1100
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Cooler temp: 5.0°C

I-552

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab job No.: 09DS0018 Date _____

Page 1 of 2

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2556

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers: (signature) _____

Analysis Required

Lab Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest	TCLP PCB	TCLP TAL metals	TCLP SVOA			Remarks
0011A	Decon Pad EB	052109	1235	L	40 mL vial	4°C	HCl	2	X									
0011A	EB		↓	L	8 oz G		HNO_3	1		X								
0012A	EB		1236	L	40 mL vial		HCl	2	X									
0011A	EB		↓	L	8 oz G		HNO_3	1		X								
0015AB			1231	L	60 mL AG		T	1			X							
0010AB	↓		1230	L	8 oz G		↓	2				X	X	X	X			
0015A	IDW Grey BRS EB		1416	L	40 mL vial		HCl	2	X									
0015A	EB		↓	L	8 oz G		HNO_3	1		X								
0014A	EB		1415	L	40 mL vial		HCl	2	X									
0014A	EB		↓	L	8 oz G		HNO_3	1		X								
0014AB			1412	S	60 mL AG		T	1			X							
0012AB	↓	↓	1410	S	8 oz G	↓	↓	2				X	X	X	X			Composite

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. 0905U618 Date _____

Page 2 of 2

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. Bacteria	TCLP VOA	TCLP Pest.	TCLP PCB	TCLP TAL metals	TCLP SVOA		Remarks
013H	S1125 B002-7 EB	052109	1135	L	40 ml vial	4°C	HCl	2	X								
013A	EB			L	8 oz G		HNO_3	1		X							
015H	EB			L	40 ml vial		HCl	2	X								
016A	EB			L	8 oz G		HNO_3	1		X							
017A	TB			L	60 mL AG		T	1	X								
018AB				S	↓		T	1			X						
019ABS	↓	↓	↓	S	8 oz G	↓	↓	2				X	X	X	X		

OFFICE USE

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ❑ Disposed of (additional fee)
- ❑ Stored (30 days max)
- ❑ Stored over 30 days (additional fee)
- ❑ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050618

WORKORD	09050618	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?
- ☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Cooler ID	Temperature
ARS01001	5 C

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050618

Date/Time	Assaigai Contact	Client Contact	Details
05-26-09 17:20	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 8081A
Preparatory/Analytical Batch ID:	S09226

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All ICV and CCV recoveries were within QC criteria on the primary column.

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes.

Laboratory Control Sample (LCS)

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

2 of 44 MS recoveries were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

1 of 22 MS/MSD RPDs were outside of QC criteria. Greater than 90% of target analytes were within of QC criteria, demonstrating system performance.

Surrogate

All surrogate recoveries were within QC criteria.

Miscellaneous:

Sample PNV-SO-IDW GREY was analyzed on a total basis (as a solid) rather than a TCLP basis due to insufficient sample provided by the client for the TCLP analysis.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Briggs

Date: 06/09/2009

Organic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW846 8081A
Preparatory/Analytical Batch ID:	S09237

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All ICV and CCV recoveries were within QC criteria on the primary column.

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes.

Laboratory Control Sample (LCS)

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries and RPDs were within QC criteria.

Surrogate

All surrogate recoveries were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

Date: 06/09/2009

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: MB

Sample wt/vol: 30 G Lab File ID: 2PC0027.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 18:59:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8081

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
319-84-6	a-BHC		0.010	mg/Kg	0.00083	U
5103-71-9	a-Chlordane		0.010	mg/Kg	0.0008	U
309-00-2	Aldrin		0.010	mg/Kg	0.0019	U
319-85-7	b-BHC		0.010	mg/Kg	0.0018	U
57-74-9	Chlordane, total		0.010	mg/Kg	0.00	U
319-86-8	d-BHC		0.0050	mg/Kg	0.0027	U
60-57-1	Dieldrin		0.010	mg/Kg	0.0020	U
959-98-8	Endosulfan I		0.010	mg/Kg	0.0015	U
33213-65-9	Endosulfan II		0.0050	mg/Kg	0.0019	U
1031-07-8	Endosulfan Sulfate	#2	0.0050	mg/Kg	0.0017	U
72-20-8	Endrin		0.0050	mg/Kg	0.0018	U
7421-93-4	Endrin Aldehyde		0.0050	mg/Kg	0.00087	U
53494-70-5	Endrin Ketone		0.010	mg/Kg	0.0019	U
58-89-9	g-BHC		0.0050	mg/Kg	0.0016	U
5103-74-2	g-Chlordane		0.0100	mg/Kg	0.0015	U
76-44-8	Heptachlor	#2	0.0050	mg/Kg	0.0010	U
1024-57-3	Heptachlor Epoxide		0.010	mg/Kg	0.0013	U
72-43-5	Methoxychlor		0.010	mg/Kg	0.0025	U
6088-51-3	p,p-DDD	#2	0.010	mg/Kg	0.0023	U
72-55-9	p,p-DDE		0.010	mg/Kg	0.0016	U
50-29-3	p,p-DDT		0.0100	mg/Kg	0.0016	U
8001-35-2	Toxaphene, total		0.050	mg/Kg	0.0005	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: LCS

Sample wt/vol: 30 G Lab File ID: 2PC0028.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 19:19:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8081

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
319-84-6	a-BHC		0.0163	mg/Kg	0.00083	
5103-71-9	a-Chlordane		0.0157	mg/Kg	0.0008	
309-00-2	Aldrin		0.0152	mg/Kg	0.0019	
319-85-7	b-BHC		0.0168	mg/Kg	0.0018	
319-86-8	d-BHC		0.0171	mg/Kg	0.0027	
60-57-1	Dieldrin		0.0153	mg/Kg	0.0020	
959-98-8	Endosulfan I		0.0151	mg/Kg	0.0015	
33213-65-9	Endosulfan II		0.0151	mg/Kg	0.0019	
1031-07-8	Endosulfan Sulfate	#2	0.0154	mg/Kg	0.0017	
72-20-8	Endrin		0.0168	mg/Kg	0.0018	
7421-93-4	Endrin Aldehyde		0.0154	mg/Kg	0.00087	
53494-70-5	Endrin Ketone		0.0227	mg/Kg	0.0019	
58-89-9	g-BHC		0.0165	mg/Kg	0.0016	
5103-74-2	g-Chlordane		0.0156002	mg/Kg	0.0015	
76-44-8	Heptachlor	#2	0.0177	mg/Kg	0.0010	
1024-57-3	Heptachlor Epoxide		0.0156	mg/Kg	0.0013	
72-43-5	Methoxychlor		0.0183	mg/Kg	0.0025	
6088-51-3	p,p-DDD		0.0155	mg/Kg	0.0023	
72-55-9	p,p-DDE	#2	0.0143	mg/Kg	0.0016	
50-29-3	p,p-DDT		0.0165744	mg/Kg	0.0016	

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A

Sample wt/vol: 2 G Lab File ID: 2PC0029.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 14:10:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 19:40:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8081

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
319-84-6	a-BHC		0.15	mg/Kg	0.012	U
5103-71-9	a-Chlordane		0.15	mg/Kg	0.012	U
309-00-2	Aldrin		0.15	mg/Kg	0.028	U
319-85-7	b-BHC		0.15	mg/Kg	0.027	U
57-74-9	Chlordane, total		0.75	mg/Kg	0.02	U
319-86-8	d-BHC		0.075	mg/Kg	0.040	U
60-57-1	Dieldrin		0.15	mg/Kg	0.030	U
959-98-8	Endosulfan I		0.15	mg/Kg	0.022	U
33213-65-9	Endosulfan II		0.075	mg/Kg	0.028	U
1031-07-8	Endosulfan Sulfate	#2	0.075	mg/Kg	0.026	U
72-20-8	Endrin		0.075	mg/Kg	0.027	U
7421-93-4	Endrin Aldehyde		0.075	mg/Kg	0.013	U
53494-70-5	Endrin Ketone		0.15	mg/Kg	0.028	U
58-89-9	g-BHC		0.075	mg/Kg	0.024	U
5103-74-2	g-Chlordane		0.1500	mg/Kg	0.0225	U
76-44-8	Heptachlor	#2	0.075	mg/Kg	0.015	U
1024-57-3	Heptachlor Epoxide		0.15	mg/Kg	0.020	U
72-43-5	Methoxychlor		0.15	mg/Kg	0.038	U
6088-51-3	p,p-DDD	#2	0.15	mg/Kg	0.034	U
72-55-9	p,p-DDE		0.15	mg/Kg	0.024	U
50-29-3	p,p-DDT		0.1500	mg/Kg	0.0240	U
8001-35-2	Toxaphene, total		0.75	mg/Kg	0.0072	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MS]

Sample wt/vol: 2 G Lab File ID: 2PC0030.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 20:00:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8081

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
319-84-6	a-BHC		0.250	mg/Kg	0.012	
5103-71-9	a-Chlordane		0.212	mg/Kg	0.012	
309-00-2	Aldrin		0.214	mg/Kg	0.028	
319-85-7	b-BHC		0.262	mg/Kg	0.027	
319-86-8	d-BHC		0.270	mg/Kg	0.040	
60-57-1	Dieldrin		0.218	mg/Kg	0.030	
959-98-8	Endosulfan I		0.218	mg/Kg	0.022	
33213-65-9	Endosulfan II		0.263	mg/Kg	0.028	
1031-07-8	Endosulfan Sulfate	#2	0.228	mg/Kg	0.026	
72-20-8	Endrin		0.260	mg/Kg	0.027	
7421-93-4	Endrin Aldehyde		0.171	mg/Kg	0.013	
53494-70-5	Endrin Ketone		0.380	mg/Kg	0.028	
58-89-9	g-BHC		0.229	mg/Kg	0.024	
5103-74-2	g-Chlordane		0.225942	mg/Kg	0.0225	
76-44-8	Heptachlor	#2	0.242	mg/Kg	0.015	
1024-57-3	Heptachlor Epoxide		0.268	mg/Kg	0.020	
72-43-5	Methoxychlor		0.358	mg/Kg	0.038	
6088-51-3	p,p-DDD		0.264	mg/Kg	0.034	
72-55-9	p,p-DDE	#2	0.170	mg/Kg	0.024	
50-29-3	p,p-DDT		0.249028	mg/Kg	0.0240	

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A[MSD]

Sample wt/vol: 2 G Lab File ID: 2PC0031.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-23-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 20:20:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) S8081

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
319-84-6	a-BHC		0.247	mg/Kg	0.012	
5103-71-9	a-Chlordane		0.237	mg/Kg	0.012	
309-00-2	Aldrin		0.231	mg/Kg	0.028	
319-85-7	b-BHC		0.307	mg/Kg	0.027	
319-86-8	d-BHC		0.294	mg/Kg	0.040	
60-57-1	Dieldrin		0.257	mg/Kg	0.030	
959-98-8	Endosulfan I		0.239	mg/Kg	0.022	
33213-65-9	Endosulfan II		0.273	mg/Kg	0.028	
1031-07-8	Endosulfan Sulfate	#2	0.266	mg/Kg	0.026	
72-20-8	Endrin		0.295	mg/Kg	0.027	
7421-93-4	Endrin Aldehyde		0.193	mg/Kg	0.013	
53494-70-5	Endrin Ketone		0.412	mg/Kg	0.028	
58-89-9	g-BHC		0.260	mg/Kg	0.024	
5103-74-2	g-Chlordane		0.282314	mg/Kg	0.0225	
76-44-8	Heptachlor	#2	0.313	mg/Kg	0.015	
1024-57-3	Heptachlor Epoxide		0.271	mg/Kg	0.020	
72-43-5	Methoxychlor		0.433	mg/Kg	0.038	
6088-51-3	p,p-DDD	#2	0.230	mg/Kg	0.034	
72-55-9	p,p-DDE		0.250	mg/Kg	0.024	
50-29-3	p,p-DDT		0.264241	mg/Kg	0.0240	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: MB

Sample wt/vol: 1000 ML Lab File ID: 2PC0034.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 21:20:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0025	mg/L	0.00014	U
72-20-8	Endrin	0.0010	mg/L	0.00005	U
76-44-8	Heptachlor	0.0010	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0010	mg/L	0.00004	U
58-89-9	Lindane	0.0010	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0010	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0025	mg/L	0.0001	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: LCS

Sample wt/vol: 1000 ML Lab File ID: 2PC0035.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-27-2009 21:40:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
72-20-8	Endrin	0.000403	mg/L	0.00005	J
76-44-8	Heptachlor	0.000316	mg/L	0.00002	J
1024-57-3	Heptachlor Epoxide	0.000340	mg/L	0.00004	J
58-89-9	Lindane	0.000350	mg/L	0.00006	J
72-43-5	Methoxychlor	0.000451	mg/L	0.00004	J

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-007B

Sample wt/vol: 140 ML Lab File ID: 2PC0045.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 12:30:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-28-2009 1:02:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.018	mg/L	0.0010	U
72-20-8	Endrin	0.0071	mg/L	0.00036	U
76-44-8	Heptachlor	0.0071	mg/L	0.00014	U
1024-57-3	Heptachlor Epoxide	0.0071	mg/L	0.00028	U
58-89-9	Lindane	0.0071	mg/L	0.00043	U
72-43-5	Methoxychlor	0.0071	mg/L	0.00028	U
8001-35-2	Toxaphene	0.018	mg/L	0.0007	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU1S B002-7

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-019B

Sample wt/vol: 930 ML Lab File ID: 2PC0046.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 11:35:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-22-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 2 uL Date Analyzed: 05-28-2009 1:22:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) T8081

CAS NO.	COMPOUND	Concentration		MDL (Adjusted)	Q
57-74-9	Chlordane	0.0027	mg/L	0.00015	U
72-20-8	Endrin	0.0011	mg/L	0.00005	U
76-44-8	Heptachlor	0.0011	mg/L	0.00002	U
1024-57-3	Heptachlor Epoxide	0.0011	mg/L	0.00004	U
58-89-9	Lindane	0.0011	mg/L	0.00006	U
72-43-5	Methoxychlor	0.0011	mg/L	0.00004	U
8001-35-2	Toxaphene	0.0027	mg/L	0.0001	U

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-SO-SU23SB001
Laboratory Report Identification: 09050616

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

5 samples were received by Assaigai Analytical Laboratories, Inc. on Thursday, May 21, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050616-007B	PNV-SO-SU23SB001	TCLP	Pesticides
09050616-007B	PNV-SO-SU23SB001	WATER	Pesticides
09050616-014B	PNV-SO-SU23SB002	TCLP	Pesticides
09050616-014B	PNV-SO-SU23SB002	WATER	Pesticides
09050616-022B	PNV-SO-SU23SB005	TCLP	Pesticides
09050616-022B	PNV-SO-SU23SB005	WATER	Pesticides
09050616-023B	PNV-SO-SU23SB005 DUP	TCLP	Pesticides
09050616-023B	PNV-SO-SU23SB005 DUP	WATER	Pesticides
09050616-030B	PNV-SO-SU23SB006	TCLP	Pesticides
09050616-030B	PNV-SO-SU23SB006	WATER	Pesticides

Preparation Methods and Dates

Preparation Method	Preparation Date
PCBs by SW846 3510C	05-26-2009
TCLP Pesticides by SW846 3510C	05-26-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
8081A Pesticides by GC/ECD TCLP	05-27-2009
8081A Pesticides by GC/ECD TCLP	05-28-2009
8082 PCBs by GC/ECD	05-28-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 16:54:27

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-010

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: slombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ ASSAIGAI
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master Loop
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505-3015964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	~~Isotopic Thorium~~	~~Isotopic Uranium~~	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
02	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X				
03	~~5/20/09~~		~~PNV-L-SU23-SB005-52009(TRIP BLANK)~~	1	L	4C								
04	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C					5-22-09 YKM	X	X	X
05	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C					X	X	X	X
06	5/20/09		PNV-L-SU23SB005-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 YKM				
07	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE) 05-22-09 YKM	1	S	4C				X	5-22-09 YKM			
08	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C						X	X	X
09	5/20/09		PNV-L-SU23SB005-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 YKM				
10	5/20/09		PNV-L-SU23SB006-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 YKM				
11	5/20/09		PNV-L-SU23SB006-52009 (TRIP BLANK)	1	L	4C			X	5-21-09 YKM				
12	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C				X				
13	5/20/09		PNV-L-SU23SB006-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 YKM				
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C					X			X
15	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C					X	X	X	X
16	5/20/09		PNV-L-SU23SB001-52009 (EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 YKM				
17	5/20/09		PNV-SO-SU23SB005-52009 (MS/MSD)	1	S	4C				X	~~X~~	5-22-09 YKM		~~X~~ 5-22-09 YKM
18	5/20/09		PNV-SO-SU23SB001-52009	1	S	4C						X	X	

5-22-09 YKM

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	05-22-09	0705
Printed Name				Mat. Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-011

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4501 Master Road
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505.345.8964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-L-SU23SB005-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JHM				
02	5/20/09		PNV-L-SU23SB001-52009(FIELD BLANK)	1	L	4C		X	X					
03	5/20/09		PNV-SO0SU23SB001-52009	1	S	4C				X				
04	5/20/09		PNV-L-SU23SB001-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JHM				
05	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
06	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C				X				
07	5/20/09		PNV-L-SU23SB002-52009(FIELD BLANK)	1	L	4C		X	X					
08	5/20/09		PNV-L-SU23SB002-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 JHM				
09	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C				X				
10	5/20/09		PNV-L-SU23SB002-52009(TRIP BLANK)	1	L	4C			X	5-22-09 JHM				
11	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C					X		X	
12	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C						X		X
13	5/20/09		PNV-L-SU23-52009 (TEMPERATURE BLANK)	1	L	4C								
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C						X	X	
15														
16														
17														
18														

Total Metals 5-22-09 JHM
VOA 5-20-09 ES

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 720 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew D. Eden	052209	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. D9105061160 Date _____

Page 1 of 3

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers: (signature) _____

Analysis Required

AALI Function Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest	TCLP Acid	TCLP TAL metals	TCLP SVOA		Remarks
001A	SU239 B001 EB	052009		L	40 mL vial	4°C	HCl	2	X								
002A	EB			L	250 mL AG		HNO_3	1		X							
003A	EB			L	40 mL vial		HCl	2	X								
004A	EB			L	250 mL AG		HNO_3	1		X							
005A	TB			L	60 mL AG		—	1	X								
006AB				S	↓		↓	1			X						
007AB	↓			S	250 mL AG		↓	2				X	X	X	X		
008A	SU239 B002 EB			L	40 mL vial		HCl	2	X								
009BA	EB			L	250 mL AG		HNO_3	1		X							
010C10A	EB			L	40 mL Vial		HCl	2	X								
011D11A	EB			L	250 mL AG		HNO_3	1		X							
012E12A	TB			L	60 mL AG		—		X								

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature:		Signature:	Signature:		Signature:
Printed:		Printed:	Printed:		Printed:
Company:		Company:	Company:		Company:
Reason:		Reason:	Reason:		Reason:

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

4" x" OUTS DMS 052609

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab Job No.: 0905D1616 Date _____

Page 2 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp	Preservation Chemical	No. of Containers	LOA	Pesticides	TCLP VOA	TCLP Pest	TCLP Metals	TCLP SVOA		Remarks
D13AB	SU23 B002	052009	T	S	60 mL AG	4°C	T	1			X					
D14AB	↓			S	250 mL AG		↓	2				X	X	X	X	X 5/20/09
D15A	SU23 B005 EB			L	40 mL vial		HCl	2	X							
D16A	EB			L	250 mL AG		HNO_3	1		X						
D17A	EB			L	40 mL vial		HCl	2	X							
D18A	EB			L	250 mL AG		HNO_3	1		X						
D19A	TB			L	60 mL AG		T	1	X							
D20AB				S	↓			3			X					Include MS/MSD
D21AB	DUP			S	↓			1			X					
D22AB				S	250 mL AG			4				X	X	X	X	Include MS/MSD
D23AB	DUP	↓	↓	S	↓	↓	↓	2				X	X	X	X	

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. 0905D616 Date

Page 3 of 3

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest	TCLP Herb	TCLP TAL metals	TCLP SVOA		Remarks
024A	SU235 B006 EB	052005	T	L	40 mL vial	4°C	HCl	2	X								
025A	EB			L	250 mL AG		HNO_3	1		X							
026A	FB			L	40 mL vial		HCl	2	X								
027A	FB			L	250 mL AG		HNO_3	1		X							
028A	TB			L	60 mL AG		T	1	X								
029AB				S				1			X						
030AB				S	250 mL AG			2				X	X	X	X		

OBSOLETE

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050616

WORKORD	09050616	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?
- ☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050616

Date/Time	*Assaigai Contact*	*Client Contact*	*Details*
05-26-09 17:21	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Organic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW846 1311/8082
Preparatory/Analytical Batch ID:	S07080

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

The 1016/1260 Aroclor sumations pass for all initial and continuing calibration verifications on the reported column.

Note: A five point calibration was utilized for Aroclors 1016 and 1260

Quality Control Information:

Method Blank

The laboratory method blank associated with the analyses was non-detect for target analytes.

Laboratory Control Sample (LCS)

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries were within QC criteria.

All MS/MSD RPDs were within QC criteria on the reported column.

Surrogate

All surrogate recoveries were within QC criteria, with the exception of the DCB in samples MB, LCS, PNV-SO-SU23SB005[MS] and PNV-SO-SU1S B002-7, which were outside of QC criteria high. Data is validated by the passing of TCMX. The QC trend will be monitored to ensure that the QC windows are appropriate.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W Briggs

Date: 06/09/2009

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: MB

Sample wt/vol: 1000 ML Lab File ID: 1PS3065.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 17:44:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.50	ug/L	0.10	U
11104-28-2	Aroclor 1221		0.50	ug/L	0.14	U
11141-16-5	Aroclor 1232		0.50	ug/L	0.20	U
53469-21-9	Aroclor 1242		0.50	ug/L	0.20	U
12672-29-6	Aroclor 1248		0.50	ug/L	0.070	U
11097-69-1	Aroclor 1254		0.50	ug/L	0.060	U
11096-82-5	Aroclor 1260		0.50	ug/L	0.070	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCS

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: LCS

Sample wt/vol: 1000 ML Lab File ID: 1PS3066.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 18:15:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	1.37	ug/L	0.10	
11096-82-5	Aroclor 1260		1.15	ug/L	0.070	

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-022B

Sample wt/vol: 930 ML Lab File ID: 1PS3067.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 18:47:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.54	ug/L	0.11	U
11104-28-2	Aroclor 1221		0.54	ug/L	0.15	U
11141-16-5	Aroclor 1232		0.54	ug/L	0.22	U
53469-21-9	Aroclor 1242		0.54	ug/L	0.22	U
12672-29-6	Aroclor 1248		0.54	ug/L	0.075	U
11097-69-1	Aroclor 1254		0.54	ug/L	0.064	U
11096-82-5	Aroclor 1260		0.54	ug/L	0.075	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005[MS]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-022B[MS]

Sample wt/vol: 460 ML Lab File ID: 1PS3068.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 19:18:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	2.68	ug/L	0.22	
11096-82-5	Aroclor 1260		2.72	ug/L	0.15	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005[MSD]

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-022B[MSD]

Sample wt/vol: 460 ML Lab File ID: 1PS3069.D

Sulfur Cleanup: (Y/N) N Date Collected: NA

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 19:49:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	2.31	ug/L	0.22	
11096-82-5	Aroclor 1260		2.33	ug/L	0.15	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB001

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-007B

Sample wt/vol: 910 ML Lab File ID: 1PS3070.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 20:21:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.55	ug/L	0.11	U
11104-28-2	Aroclor 1221		0.55	ug/L	0.15	U
11141-16-5	Aroclor 1232		0.55	ug/L	0.22	U
53469-21-9	Aroclor 1242		0.55	ug/L	0.22	U
12672-29-6	Aroclor 1248		0.55	ug/L	0.077	U
11097-69-1	Aroclor 1254		0.55	ug/L	0.066	U
11096-82-5	Aroclor 1260		0.55	ug/L	0.077	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-014B

Sample wt/vol: 880 ML Lab File ID: 1PS3073.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 21:55:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.57	ug/L	0.11	U
11104-28-2	Aroclor 1221		0.57	ug/L	0.16	U
11141-16-5	Aroclor 1232		0.57	ug/L	0.23	U
53469-21-9	Aroclor 1242		0.57	ug/L	0.23	U
12672-29-6	Aroclor 1248		0.57	ug/L	0.080	U
11097-69-1	Aroclor 1254		0.57	ug/L	0.068	U
11096-82-5	Aroclor 1260		0.57	ug/L	0.080	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-023B

Sample wt/vol: 930 ML Lab File ID: 1PS3074.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 22:27:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.54	ug/L	0.11	U
11104-28-2	Aroclor 1221		0.54	ug/L	0.15	U
11141-16-5	Aroclor 1232		0.54	ug/L	0.22	U
53469-21-9	Aroclor 1242		0.54	ug/L	0.22	U
12672-29-6	Aroclor 1248		0.54	ug/L	0.075	U
11097-69-1	Aroclor 1254		0.54	ug/L	0.064	U
11096-82-5	Aroclor 1260		0.54	ug/L	0.075	U

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB006

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-SO-SU23SB001

Matrix: WATER Lab Sample ID: 09050616-030B

Sample wt/vol: 920 ML Lab File ID: 1PS3075.D

Sulfur Cleanup: (Y/N) N Date Collected: 05-20-2009 00:00:00

% Moisture: NA Decanted: (Y/N): N Date Received: 05-21-2009

Concentrated Extract Volume: 10 ML Date Extracted: 05-26-2009

Injection Volume: 1 uL Date Analyzed: 05-28-2009 22:58:00

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.000

Extraction: (Type) W8082

CAS NO.	COMPOUND		Concentration		MDL (Adjusted)	Q
12674-11-2	Aroclor 1016	#2	0.54	ug/L	0.11	U
11104-28-2	Aroclor 1221		0.54	ug/L	0.15	U
11141-16-5	Aroclor 1232		0.54	ug/L	0.22	U
53469-21-9	Aroclor 1242		0.54	ug/L	0.22	U
12672-29-6	Aroclor 1248		0.54	ug/L	0.076	U
11097-69-1	Aroclor 1254		0.54	ug/L	0.065	U
11096-82-5	Aroclor 1260		0.54	ug/L	0.076	U

COVER PAGE for

AMERICAN RADIATION SERVICES
2709-D PAN AMERICAN FREEWAY
ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-SU23SB001 EB
Laboratory Report Identification: 09050616

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

13 samples were received by Assaigai Analytical Laboratories, Inc. on Thursday, May 21, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050616-002A	PNV-L-SU23SB001 EB	WATER	Metals
09050616-004A	PNV-L-SU23SB001 FB	WATER	Metals
09050616-007B	PNV-SO-SU23SB001	TCLP	Metals
09050616-009A	PNV-L-SU23SB002 EB	WATER	Metals
09050616-011A	PNV-L-SU23SB002 FB	WATER	Metals
09050616-014B	PNV-SO-SU23SB002	TCLP	Metals
09050616-016A	PNV-L-SU23SB005 EB	WATER	Metals
09050616-018A	PNV-L-SU23SB005 FB	WATER	Metals
09050616-022B	PNV-SO-SU23SB005	TCLP	Metals
09050616-023B	PNV-SO-SU23SB005 DUP	TCLP	Metals
09050616-025A	PNV-L-SU23SB006 EB	WATER	Metals
09050616-027A	PNV-L-SU23SB006 FB	WATER	Metals
09050616-030B	PNV-SO-SU23SB006	TCLP	Metals

Preparation Methods and Dates

Preparation Method	Preparation Date
ICP & FLAA SW846 1311/3010A	05-26-2009
ICP & FLAA SW846 3005	05-26-2009
Mercury by SW846 7470	05-26-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
6010B ICP	05-26-2009
6010B ICP TCLP	05-26-2009
7470A CVAA TCLP	05-26-2009
SW846 7470A CVAA	05-26-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 16:51:37

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-010

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master Loop
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505-3115964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
02	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X				
03	~~5/20/09~~		~~PNV-L-SU23-SB005-52009(TRIP BLANK)~~	~~1~~	~~L~~	~~4C~~								
04	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C					5-20-09 VHM	X	X	X
05	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C					X	X	X	X
06	5/20/09		PNV-L-SU23SB005-52009 (FIELD BLANK) 05-22-09 VHM	1	L	4C		X	X	5-21-09 VHM				
07	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X	5-20-09 VHM			
08	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C						X	X	X
09	5/20/09		PNV-L-SU23SB005-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
10	5/20/09		PNV-L-SU23SB006-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 VHM				
11	5/20/09		PNV-L-SU23SB006-52009 (TRIP BLANK)	1	L	4C			X	5-21-09 VHM				
12	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C				X				
13	5/20/09		PNV-L-SU23SB006-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C					X			X
15	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C					X	X	X	X
16	5/20/09		PNV-L-SU23SB001-52009 (EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
17	5/20/09		PNV-SO-SU23SB005-52009 (MS/MSD)	1	S	4C				X	~~X~~ 5-20-09 VHM			~~X~~ 5-20-09 VHM
18	5/20/09		PNV-SO-SU23SB001-52009	1	S	4C						X	X	

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-20-09 Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	05-22-09	0705
Printed Name				Mat. Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Total Metals VHM 5-20-09
VOA 5-20-09
5-22-09

Page 2 of 320

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-011

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master head
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505. 345. 8964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

5-22-09 VHM Total Metals
VOA
5-20-09

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-L-SU23SB005-52009(TRIP BLANK)	1	L	4C			X	5-22-09 VHM				
02	5/20/09		PNV-L-SU23SB001-52009(FIELD BLANK)	1	L	4C		X	X					
03	5/20/09		PNV-SO0SU23SB001-52009	1	S	4C				X				
04	5/20/09		PNV-L-SU23SB001-52009(TRIP BLANK)	1	L	4C			X	5-22-09 VHM				
05	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
06	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C				X				
07	5/20/09		PNV-L-SU23SB002-52009(FIELD BLANK)	1	L	4C		X	X					
08	5/20/09		PNV-L-SU23SB002-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 VHM				
09	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C				X				
10	5/20/09		PNV-L-SU23SB002-52009(TRIP BLANK)	1	L	4C			X	5-22-09 VHM				
11	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C					X		X	
12	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C						X		X
13	5/20/09		PNV-L-SU23-52009 (TEMPERATURE BLANK)	1	L	4C								
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C						X	X	
15														
16														
17														
18														

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 720 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew D. Eden	052209	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | SI: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab job No. D9105026116 Date

Page 1 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address:

City / State / Zip:

Project Name / Number:

Contract / Purchase Order / Quote:

Project Manager / Contact:

Telephone No.:

Fax No.:

Samplers: (signature)

AAL Freezer Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest	TCLP Acid	TCLP Tal. metals	TCLP SVOA		Remarks
001A	SU235 B001 EB	052009	7	L	40 mL vial	4°C	HCl	2	X								
002A	EB			L	250 mL AG		HNO_3	1		X							
003A	EB			L	40 mL vial		HCl	2	X								
004A	EB			L	250 mL AG		HNO_3	1		X							
005A	TB			L	60 mL AG		—	1	X								
006AB				S	↓		↓	1			X						
007AB	↓			S	250 mL AG		↓	2				X	X	X	X		
008A	SU235 B002 EB			L	40 mL vial		HCl	2	X								
009A	EB			L	250 mL AG		HNO_3	1		X							
010A	EB			L	40 mL vial		HCl	2	X								
011A	EB			L	250 mL AG		HNO_3	1		X							
012A	TB	↓	↓	L	60 mL AG	↓	—		X								

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment:

Shipment No.:

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

4" x" OUTS DMS 052009

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No.: 0905016016 Date

Page 2 of 3

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. cond.	TCLP VOA	TCLP Pest	TCLP RCRA	TCLP Metals	TCLP SVOA		Remarks
013AB	SU23 B002	052009	T	S	60 mL AG	4°C	T	1				X					
014AB	↓			S	250 mL AG		↓	2					X	X	X	X	X 5/20/09
015A	SU23 B005 EB			L	40 mL vial		HCl	2	X								
016A	EB			L	250 mL AG		HNO_3	1		X							
017A	EB			L	40 mL vial		HCl	2	X								
018A	EB			L	250 mL AG		HNO_3	1		X							
019A	TB			L	60 mL AG		T	1	X								
020AB				S				3				X					Include MS/MSD
021AB	DUP			S				1				X					
022AB				S	250 mL AG			4					X	X	X	X	Include MS/MSD
023AB	DUP			S				2					X	X	X	X	

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

Lab Job No. 0905D616 Date _____

Page 3 of 3

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. Metals	TCLP VOA	TCLP Pest	TCLP Pesticides	TCLP Sil.	Remarks
024A	SU235 B006 EB	052009	T	L	40 mL vial	4°C	HCl	2	X						
025A	EB			L	250 mL AG		HNO_3	1		X					
026A	FB			L	40 mL vial		HCl	2	X						
027A	FB			L	250 mL AG		HNO_3	1		X					
028A	TB			L	60 mL AG		T	1	X						
029AB				S				1			X				
030AB				S	250 mL AG			2				X	X	X	X

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment: _____

Shipment No.: _____

Special Instructions: _____

Comments: _____

After analysis, samples are to be:

- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050616

WORKORD	09050616	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ A) Do the number of sample containers match the Chain-of-Custody (COC)?
- ☑ B) Does all the information on sample labels match the information on the COC?
- ☑ C) Are all sample containers intact?
- ☑ D) Are cooler custody seals intact?
- ☑ E) Are container custody seals intact?
- ☐ F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- ☑ 1) Are sample containers appropriate for analysis requested?
- ☑ 2) Is there sufficient volume for requested analyses?
- ☑ 3) Are samples properly preserved?
- ☑ 4) Are samples received within hold time?
- ☐ 5) Headspace present (as applicable)?

☐ **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050616

Date/Time	*Assaigai Contact*	*Client Contact*	*Details*
05-26-09 17:21	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Inorganic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW-846 3005A/6010B
Preparatory/Analytical Batch ID:	M09527

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for analytes of interest.

Client Required Quantitation Limit (CRQL):

All CRQLs were within QA/QC criteria, with the following exceptions:

- Ba, Cd, Cr and Ag in the ending CRDL, which were outside of QC criteria high,
- Cd and Pb in the opening CRQL, which were outside of QC criteria low,
- As in the ending CRQL, which was outside of QC criteria low.

These elements will be monitored to determine if the CRDLs are appropriate.

Calibration Blank (CB):

All laboratory calibration blanks associated with the analyses were non-detect for target analytes at the CRDL.

Method Blank:

All laboratory method blanks associated with the analyses were non-detect for target analytes at the CRDL.

ICP Interference Check Samples (ICSA/ICSAB):

No significant interferences were detected in the ICSA analyses.

All elements were within QA/QC criteria for the ICSAB.

Matrix Spike and Matrix Spike Duplicate (MS/MSD):

All MS/MSD recoveries and RPDs were within QA/QC criteria.

Matrix Duplicate (MD):

All MD RPDs associated with these analyses were within QC criteria, with the exception of Cd. The RPD of this analyte is outside of QC criteria due to the low concentrations of the sample and its duplicate.

Laboratory Control Sample (LCS):

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Serial Dilution (SD):

All SD RPDs associated with these analyses were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Briere

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW-846 1311/3005A/6010B
Preparatory/Analytical Batch ID:	M09526

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for analytes of interest.

Client Required Quantitation Limit (CRQL):

All CRQLs were within QA/QC criteria, with the following exceptions:

- Ba, Cd, Cr and Ag in the ending CRDL, which were outside of QC criteria high,
- Cd and Pb in the opening CRQL, which were outside of QC criteria low,
- As in the ending CRQL, which was outside of QC criteria low.

These elements will be monitored to determine if the CRDLs are appropriate.

Calibration Blank (CB):

All laboratory calibration blanks associated with the analyses were non-detect for target analytes at the CRDL.

Method Blank:

All laboratory method blanks associated with the analyses were non-detect for target analytes at the CRDL.

ICP Interference Check Samples (ICSA/ICSAB):

No significant interferences were detected in the ICSA analyses.

All elements were within QA/QC criteria for the ICSAB.

Matrix Spike and Matrix Spike Duplicate (MS/MSD):

All MS/MSD recoveries and RPDs were within QA/QC criteria.

Matrix Duplicate (MD):

All MD RPDs associated with these analyses were within QC criteria, with the exception of Cd. The RPD of this analyte is outside of QC criteria due to the low concentrations of the sample and its duplicate.

Laboratory Control Sample (LCS):

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Serial Dilution (SD):

All SD RPDs associated with these analyses were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Briare

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW-846 7470A
Preparatory/Analytical Batch ID:	M09525

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated was <MDL.

Laboratory Control Sample (LCS)

The LCS recovery associated with these analyses was within AALI's QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

The MS/MSD recoveries and RPD associated with these analyses were within QC criteria.

Matrix Duplicate (MD)

The MD RPD associated with these analyses was within QC criteria.

Serial Dilution (SD)

The SD RPD was within QC criteria.

Calibration Blanks (CB)

All of the CBs associated with these analyses had concentrations that were <CRDL.

Client Required Quantitation Limit (CRQL)

The CRDLs associated with this analysis were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W Brice

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050616

Method/Analysis Information

Analytical Method:	SW-846 1311/7470A
Preparatory/Analytical Batch ID:	M09524

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated was <MDL.

Laboratory Control Sample (LCS)

The LCS recovery associated with these analyses was within AALI's QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

The MS/MSD recoveries and RPD associated with these analyses were within QC criteria.

Matrix Duplicate (MD)

The MD RPD associated with these analyses was within QC criteria.

Serial Dilution (SD)

The SD RPD was within QC criteria.

Calibration Blanks (CB)

All of the CBs associated with these analyses had concentrations that were <CRDL.

Client Required Quantitation Limit (CRQL)

The CRDLs associated with this analysis were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Briggs

Date: 6/09/2009

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-002A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:00:42	1.000	6010B ICP
7440-39-3	Barium	0.00254 mg/L	0.00015	B	05-26-2009 23:00:42	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:00:42	1.000	6010B ICP
7440-47-3	Chromium	0.00063 mg/L	0.00025	B	05-26-2009 23:00:42	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:00:42	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 11:52:55	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:00:42	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:00:42	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB001 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-004A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:06:45	1.000	6010B ICP
7440-39-3	Barium	0.00076 mg/L	0.00015	B	05-26-2009 23:06:45	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:06:45	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:06:45	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:06:45	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 11:54:50	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:06:45	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:06:45	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-009A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:09:50	1.000	6010B ICP
7440-39-3	Barium	0.00179 mg/L	0.00015	B	05-26-2009 23:09:50	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:09:50	1.000	6010B ICP
7440-47-3	Chromium	0.00084 mg/L	0.00025	B	05-26-2009 23:09:50	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:09:50	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 11:56:42	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:09:50	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:09:50	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB002 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-011A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:12:54	1.000	6010B ICP
7440-39-3	Barium	0.00141 mg/L	0.00015	B	05-26-2009 23:12:54	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:12:54	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:12:54	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:12:54	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:02:23	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:12:54	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:12:54	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-016A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:15:54	1.000	6010B ICP
7440-39-3	Barium	0.00116 mg/L	0.00015	B	05-26-2009 23:15:54	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:15:54	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:15:54	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:15:54	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:04:16	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:15:54	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:15:54	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB005 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-018A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:18:54	1.000	6010B ICP
7440-39-3	Barium	0.00120 mg/L	0.00015	B	05-26-2009 23:18:54	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:18:54	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:18:54	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:18:54	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:06:07	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:18:54	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:18:54	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-025A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:24:56	1.000	6010B ICP
7440-39-3	Barium	0.00203 mg/L	0.00015	B	05-26-2009 23:24:56	1.000	6010B ICP
7440-43-9	Cadmium	0.00056 mg/L	0.00021	B	05-26-2009 23:24:56	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:24:56	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:24:56	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:08:00	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:24:56	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:24:56	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU23SB006 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: WATER Lab Sample ID: 09050616-027A

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:28:00	1.000	6010B ICP
7440-39-3	Barium	0.00072 mg/L	0.00015	B	05-26-2009 23:28:00	1.000	6010B ICP
7440-43-9	Cadmium	0.00062 mg/L	0.00021	B	05-26-2009 23:28:00	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:28:00	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:28:00	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:09:51	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:28:00	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:28:00	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB001

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-007B

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.025 mg/L	0.009		05-26-2009 22:26:02	5.000	6010B ICP TCLP
7440-39-3	Barium	0.369 mg/L	0.0008		05-26-2009 22:26:02	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:26:02	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0226 mg/L	0.0012		05-26-2009 22:26:02	5.000	6010B ICP TCLP
7439-92-1	Lead	0.019 mg/L	0.009	B	05-26-2009 22:26:02	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.000200 mg/L	0.0000001	U	05-26-2009 11:23:01	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.050 mg/L	0.025	U	05-26-2009 22:26:02	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:26:02	5.000	6010B ICP TCLP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB002

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-014B

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.032 mg/L	0.009		05-26-2009 22:32:03	5.000	6010B ICP TCLP
7440-39-3	Barium	0.669 mg/L	0.0008		05-26-2009 22:32:03	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:32:03	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0128 mg/L	0.0012		05-26-2009 22:32:03	5.000	6010B ICP TCLP
7439-92-1	Lead	0.025 mg/L	0.009	U	05-26-2009 22:32:03	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.000200 mg/L	0.0000001	U	05-26-2009 11:24:52	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.050 mg/L	0.025	U	05-26-2009 22:32:03	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:32:03	5.000	6010B ICP TCLP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-022B

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.025 mg/L	0.009	U	05-26-2009 22:18:32	5.000	6010B ICP TCLP
7440-39-3	Barium	0.447 mg/L	0.0008		05-26-2009 22:18:32	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:18:32	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0054 mg/L	0.0012	B	05-26-2009 22:18:32	5.000	6010B ICP TCLP
7439-92-1	Lead	0.025 mg/L	0.009	U	05-26-2009 22:18:32	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.000200 mg/L	0.0000001	U	05-26-2009 11:08:02	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.034 mg/L	0.025	B	05-26-2009 22:18:32	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:18:32	5.000	6010B ICP TCLP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB005 DUP

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-023B

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.025 mg/L	0.009	U	05-26-2009 22:35:07	5.000	6010B ICP TCLP
7440-39-3	Barium	0.652 mg/L	0.0008		05-26-2009 22:35:07	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:35:07	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0052 mg/L	0.0012	B	05-26-2009 22:35:07	5.000	6010B ICP TCLP
7439-92-1	Lead	0.025 mg/L	0.009	U	05-26-2009 22:35:07	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.000200 mg/L	0.0000001	U	05-26-2009 11:26:44	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.035 mg/L	0.025	B	05-26-2009 22:35:07	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:35:07	5.000	6010B ICP TCLP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU23SB006

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-SU23SB001 EB

Matrix: TCLP Lab Sample ID: 09050616-030B

Level: LOW Date Collected: 05-20-2009 00:00:00

% Solids: NA Date Received: 05-21-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.025 mg/L	0.009	U	05-26-2009 22:38:08	5.000	6010B ICP TCLP
7440-39-3	Barium	0.430 mg/L	0.0008		05-26-2009 22:38:08	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:38:08	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0056 mg/L	0.0012	B	05-26-2009 22:38:08	5.000	6010B ICP TCLP
7439-92-1	Lead	0.025 mg/L	0.009	U	05-26-2009 22:38:08	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.0000797 mg/L	0.0000001	B	05-26-2009 11:28:35	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.036 mg/L	0.025	B	05-26-2009 22:38:08	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:38:08	5.000	6010B ICP TCLP

COVER PAGE for

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ALBUQUERQUE, NM 87107
Contact: ELVIN CHAVEZ/FRANCINE TORIVIO
Email: OR 225-381-2991
SDG: PNV-L-DECON PAD
Laboratory Report Identification: 09050618

Laboratory Identification

Assaigai Analytical Laboratories, Inc.
4301 Masthead NE, Suite A
Albuquerque, NM 87109
(505) 345-8964

Project Title:

Sample Receipt

9 samples were received by Assaigai Analytical Laboratories, Inc. on Friday, May 22, 2009 for analyses.

Sample Identification

The laboratory received the following sample(s):

Lab Sample ID	Client ID	Matrix	Test/LIC
09050618-002A	PNV-L-DECON PAD EB	WATER	Metals
09050618-004A	PNV-L-DECON PAD FB	WATER	Metals
09050618-007B	PNV-L-DECON PAD	TCLP	Metals
09050618-009A	PNV-L-IDW GREY B25 EB	WATER	Metals
09050618-011A	PNV-L-IDW GREY B25 FB	WATER	Metals
09050618-013A	PNV-SO-IDW GREY	SOLID	Metals
09050618-015A	PNV-L-SU1S B002-7 EB	WATER	Metals
09050618-017A	PNV-L-SU1S B002-7 FB	WATER	Metals
09050618-019B	PNV-SO-SU1S B002-7	TCLP	Metals

Preparation Methods and Dates

Preparation Method	Preparation Date
ICP & FLAA SW846 1311/3010A	05-26-2009
ICP & FLAA SW846 3005	05-26-2009
ICP & FLAA SW846 3050	05-27-2009
Mercury by SW846 7470	05-26-2009
Mercury by SW846 7471	05-27-2009

Analysis Methods and Analysis Dates

Analysis Method	Analysis Date
6010B ICP	05-26-2009
6010B ICP	05-27-2009
6010B ICP	05-28-2009
6010B ICP	05-29-2009
6010B ICP TCLP	05-26-2009
7470A CVAA TCLP	05-26-2009
SW846 7470A CVAA	05-26-2009
SW846 7471B CVAA	05-27-2009

Comments:

I certify that this electronic image, and all hardcopies produced from this image accurately represent the data and are in compliance with the client-specific requirements, both technically and for completeness, other than the conditions detailed above or in sample data package narrative. Release, by submission through email, of the data contained in this electronic image and the computer-readable EDD (as applicable), has been authorized by the Laboratory Manager or the Manager's designee.

John W. Biava, Laboratory Manager 06-01-2009 17:02:36

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
PH: (225) 381-2991
FX: (225) 381-2996
www.amrad.com

COC No. PNV-017

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sac-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: Assaigai Analytical Laboratory
Project Manager:
Address: 4301 Masthead N.E.
Albuquerque, NM 87109
Phone: 505-345-8964
Fax: 505-345-7259
Email:

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	11:35	PNV-L-SU1SB002-7-052109(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 JMM				
02	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C					X		X	
03	5/21/09	11:35	PNV-L-SU1SB002-7-052109(FIELD BLANK)	1	L	4C		X	X	5-22-09 JMM				
04	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C						X		X
05	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C				X				
06	5/21/09	11:35	PNV-SO-SU1SB002-7-052109(TRIP BLANK)	1	L	4C			X	5-22-09 JMM				
07	5/21/09	12:31	DECON PAD WATER	1	L	4C				X				
08	5/21/09	12:35	DECON PAD EQUIPMENT BLANK	1	L	4C		X	X	5-22-09 JMM				
09	5/21/09	12:36	DECON PAD FIELD BLANK	1	L	4C		X	X					
10	5/21/09	12:30	DECON PAD WATER CONTAINER 1 OF 2	1	L	4C					X		X	
11	5/21/09	12:30	DECON PAD WATER CONTAINER 2 OF 2	1	L	4C						X		X
12	5/21/09	14:10	IDW GREY B25 BOX 1 OF 2	1	S	4C					X		X	
13	5/21/09	14:10	IDW GREY B25 BOX 2 OF 2	1	S	4C						X		X
14	5/21/09	14:12	IDW GREY B25 BOX	1	S	4C				X				
15	5/21/09	14:15	IDW GREY B25 FIELD BLANK	1	L	4C		X	X	5-22-09 JMM				
16	5/21/09	14:16	IDW GREY B25 EQUIPMENT BLANK	1	L	4C		X	X					
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09 Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0087
Samplers Name (Print): Eric Schmitt
Samplers Signature:

Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	4:10	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	052209	1100
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Cooler temp: 5.0°C

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Mastnead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab Job No.: 090SD018 Date

Page 1 of 2

Client: ARS International

Address

City / State / Zip

Project Name / Number

Contract / Purchase Order / Quote

Project Manager / Contact

Telephone No.

Fax No.

Samplers : (signature)

Analysis Required

AALI Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. metals	TCLP VOA	TCLP Pest	TCLP PCB	TCLP TAL metals	TCLP SVOA			Remarks
001A	Decon Pad EB	052109	1235	L	40 mL vial	4°C	HCl	2	X									
001A	EB		↓	L	8 oz G		HNO_3	1		X								
002A	EB		1236	L	40 mL vial		HCl	2	X									
002A	EB		↓	L	8 oz G		HNO_3	1		X								
003AB			1231	L	60 mL AG		T	1			X							
003AB	↓		1230	L	8 oz G		↓	2				X	X	X	X			
004A	IDW Grey BRS EB		1416	L	40 mL vial		HCl	2	X									
004A	EB		↓	L	8 oz G		HNO_3	1		X								
005A	EB		1415	L	40 mL vial		HCl	2	X									
005A	EB		↓	L	8 oz G		HNO_3	1		X								
006AB			1412	S	60 mL AG		T	1			X							
006AB	↓	↓	1410	S	8 oz G	↓	↓	2				X	X	X	X			Composite

Relinquished by:	Date / Time	Received by:	Relinquished by:	Date / Time	Received by:
Signature		Signature	Signature		Signature
Printed		Printed	Printed		Printed
Company		Company	Company		Company
Reason		Reason	Reason		Reason

Method of Shipment

Shipment No.

Special Instructions:

Comments:

After analysis, samples are to be:

- ❑ Disposed of (additional fee)
- ❑ Stored (30 days max)
- ❑ Stored over 30 days (additional fee)
- ❑ Returned to customer

ASSAIGAI PROJECT FILE

ASSAIGAI ANALYTICAL LABORATORIES, INC.

Chain of Custody Record

4301 Masthead N.E.
ALBUQUERQUE, NEW MEXICO 87109
(505) 345-8964

3332 WEDGEWOOD
EL PASO, TEXAS 79925
(915) 593-6000

127 EASTGATE DRIVE, 212-C
LOS ALAMOS, NEW MEXICO 87544
(505) 662-2558

Lab job No. 1905U018 Date _____

Page 2 of 2

Client: ARS International

Address: _____

City / State / Zip: _____

Project Name / Number: _____

Contract / Purchase Order / Quote: _____

Project Manager / Contact: _____

Telephone No.: _____

Fax No.: _____

Samplers : (signature): _____

Analysis Required

AAL Fraction Number	Field Sample Number / Location	Date	Time	Sample Type	Type / Size of Container	Preservation Temp.	Preservation Chemical	No. of Containers	VOA	Tot. Metals	TCLP VOA	TCLP Pest	TCLP RCRA	TCLP Total Metals	TCLP SVOA			Remarks
013A	SU15 8002-7 EB	052109	1135	L	40 ml vial	4°C	HCl	2	X									
013A	EB			L	8 oz G		HNO_3	1		X								
015A	EB			L	40 mL vial		HCl	2	X									
015A	EB			L	8 oz G		HNO_3	1		X								
017A	TB			L	60 mL AG		T	1	X									
018AB				S	↓			1			X							
019ABC	↓	↓	↓	S	8 oz G	↓	↓	2				X	X	X	X			

Relinquished by:
Signature _____
Printed _____
Company _____
Reason _____
Date _____
Time _____

Received by:
Signature _____
Printed _____
Company _____
Reason _____

Relinquished by:
Signature _____
Printed _____
Company _____
Reason _____
Date _____
Time _____

Received by:
Signature _____
Printed _____
Company _____
Reason _____

Method of Shipment _____
Shipment No. _____
Special Instructions: _____

Comments: _____

After analysis, samples are to be:
- ☐ Disposed of (additional fee)
- ☐ Stored (30 days max)
- ☐ Stored over 30 days (additional fee)
- ☐ Returned to customer

ASSAIGAI PROJECT FILE

Page 4 of 10

Assaigai Analytical Laboratories, Inc.

SAMPLE RECEIPT CHECKLIST REVIEW

09050618

WORKORD	09050618	**RECEIPT**	05/22/09
CLIENT ID	ARS01	**RECEIVED BY**	MLE
PROJECT			

Sample Check-In

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- [x] A) Do the number of sample containers match the Chain-of-Custody (COC)?
- [x] B) Does all the information on sample labels match the information on the COC?
- [x] C) Are all sample containers intact?
- [x] D) Are cooler custody seals intact?
- [x] E) Are container custody seals intact?
- [ ] F) Are ASTME_1792 compliant wipes used for NLLP testing?

Non-Conformance Events

YES/NO (Checked box = "YES" / Unchecked box = "NO" / Grey box = "NOT APPLICABLE")

- [x] 1) Are sample containers appropriate for analysis requested?
- [x] 2) Is there sufficient volume for requested analyses?
- [x] 3) Are samples properly preserved?
- [x] 4) Are samples received within hold time?
- [ ] 5) Headspace present (as applicable)?
- [ ] **Non-conformance**

Description:

Resolution:

Cooler Data

Temp. Code Cold-A **Description** *Client brought samples in their own cooler on ice.*

Cooler ID	Temperature
ARS01001	5 C

Sample Receiving Signature: _____ Date: _____

Assaigai Analytical Laboratories, Inc.

Conversation Log for 09050618

Date/Time	Assaigai Contact	Client Contact	Details
05-26-09 17:20	DMS	VIRGENE	RUN TOTAL AND TCLP RCRA METALS.

Inorganic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW-846 3005A/6010B
Preparatory/Analytical Batch ID:	M09527

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for analytes of interest.

Client Required Quantitation Limit (CRQL):

All CRQLs were within QA/QC criteria, with the following exceptions:

- Ba, Cd, Cr and Ag in the ending CRDL, which were outside of QC criteria high,
- Cd and Pb in the opening CRQL, which were outside of QC criteria low,
- As in the ending CRQL, which was outside of QC criteria low.

These elements will be monitored to determine if the CRDLs are appropriate.

Calibration Blank (CB):

All laboratory calibration blanks associated with the analyses were non-detect for target analytes at the CRDL.

Method Blank:

All laboratory method blanks associated with the analyses were non-detect for target analytes at the CRDL.

ICIInterference Check Samples (ICSA/ICSAB):

No significant interferences were detected in the ICSA analyses.

All elements were within QA/QC criteria for the ICSAB.

Matrix Spike and Matrix Spike Duplicate (MS/MSD):

All MS/MSD recoveries and RPDs were within QA/QC criteria.

Matrix Duplicate (MD):

All MD RPDs associated with these analyses were within QC criteria, with the exception of Cd. The RPD of this analyte is outside of QC criteria due to the low concentrations of the sample and its duplicate.

Laboratory Control Sample (LCS):

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Serial Dilution (SD):

All SD RPDs associated with these analyses were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Briare

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW-846 3050/6010B
Preparatory/Analytical Batch ID:	M09532

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for analytes of interest.

Client Required Quantitation Limit (CRQL):

All CRQLs were within QA/QC criteria, with the following exceptions:

- As in the opening CRDL, which was outside of QC criteria high,
- Pb in the opening CRQL, which was outside of QC criteria low,
- Cd in the ending CRDL, which was outside of QC criteria high,
- As and Se in the ending CRQL, which were outside of QC criteria low.

These elements will be monitored to determine if the CRDLs are appropriate.

Calibration Blank (CB):

All laboratory calibration blanks associated with the analyses were non-detect for target analytes at the CRDL.

Method Blank:

All laboratory method blanks associated with the analyses were non-detect for target analytes at the CRDL.

ICP Interference Check Samples (ICSA/ICSAB):

No significant interferences were detected in the ICSA analyses.

All elements were within QA/QC criteria for the ICSAB.

Matrix Spike and Matrix Spike Duplicate (MS/MSD):

All MS/MSD recoveries were within QA/QC criteria, with the exception of As, Ba, Cd, Se and Ag. The failure of these recoveries is attributed to matrix effects.

All MS/MSD RPDs were within QA/QC criteria, with the exception of As and Se. The failure of these recoveries is attributed to matrix effects.

Matrix Duplicate (MD):

All MD RPDs associated with these analyses were within QC criteria, with the exception of As and Cd. The RPD of Cd was outside of QC criteria due to the low concentrations of the sample and its duplicate. The RPD of As was outside of QC criteria due to the heterogeneous nature of the sample.

Laboratory Control Sample (LCS):

All LCS recoveries associated with these analyses were within AALI's QC criteria limits, with the exception of As, which was just outside of QC criteria high. This is attributed to the use of a real world spike with an aggressive 3050 digestion and should be taken into consideration when reviewing the data.

Serial Dilution (SD):

All SD RPDs associated with these analyses were within QC criteria.

Miscellaneous:

Sample PNV-SO-IDW GREY was analyzed on a total basis (as a solid) rather than a TCLP basis due to insufficient sample provided by the client for the TCLP analysis.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Briano

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW-846 1311/3005A/6010B
Preparatory/Analytical Batch ID:	M09526

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria for analytes of interest.

Client Required Quantitation Limit (CRQL):

All CRQLs were within QA/QC criteria, with the following exceptions:

- Ba, Cd, Cr and Ag in the ending CRDL, which were outside of QC criteria high,
- Cd and Pb in the opening CRQL, which were outside of QC criteria low,
- As in the ending CRQL, which was outside of QC criteria low.

These elements will be monitored to determine if the CRDLs are appropriate.

Calibration Blank (CB):

All laboratory calibration blanks associated with the analyses were non-detect for target analytes at the CRDL.

Method Blank:

All laboratory method blanks associated with the analyses were non-detect for target analytes at the CRDL.

ICP Interference Check Samples (ICSA/ICSAB):

No significant interferences were detected in the ICSA analyses.

All elements were within QA/QC criteria for the ICSAB.

Matrix Spike and Matrix Spike Duplicate (MS/MSD):

All MS/MSD recoveries and RPDs were within QA/QC criteria.

Matrix Duplicate (MD):

All MD RPDs associated with these analyses were within QC criteria, with the exception of Cd. The RPD of this analyte is outside of QC criteria due to the low concentrations of the sample and its duplicate.

Laboratory Control Sample (LCS):

All LCS recoveries associated with these analyses were within AALI's QC criteria limits.

Serial Dilution (SD):

All SD RPDs associated with these analyses were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:

John W Briare

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW-846 7470A
Preparatory/Analytical Batch ID:	M09525

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated was <MDL.

Laboratory Control Sample (LCS)

The LCS recovery associated with these analyses was within AALI's QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

The MS/MSD recoveries and RPD associated with these analyses were within QC criteria.

Matrix Duplicate (MD)

The MD RPD associated with these analyses was within QC criteria.

Serial Dilution (SD)

The SD RPD was within QC criteria.

Calibration Blanks (CB)

All of the CBs associated with these analyses had concentrations that were <CRDL.

Client Required Quantitation Limit (CRQL)

The CRDLs associated with this analysis were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW-846 1311/7470A
Preparatory/Analytical Batch ID:	M09524

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated was <MDL.

Laboratory Control Sample (LCS)

The LCS recovery associated with these analyses was within AALI's QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

The MS/MSD recoveries and RPD associated with these analyses were within QC criteria.

Matrix Duplicate (MD)

The MD RPD associated with these analyses was within QC criteria.

Serial Dilution (SD)

The SD RPD was within QC criteria.

Calibration Blanks (CB)

All of the CBs associated with these analyses had concentrations that were <CRDL.

Client Required Quantitation Limit (CRQL)

The CRDLs associated with this analysis were within QC criteria.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W Briggs

Date: 6/09/2009

Inorganic Analysis Case Narrative
ARS International
SDG: 09050618

Method/Analysis Information

Analytical Method:	SW-846 7470A
Preparatory/Analytical Batch ID:	M09530

Method(s):

All analyses were performed utilizing approved methodology.

Initial Calibration and Continuing Calibration Verification:

All initial and continuing calibration verifications met QA/QC criteria.

Quality Control Information:

Method Blank

The laboratory method blank associated was <MDL.

Laboratory Control Sample (LCS)

The LCS recovery associated with these analyses was within AALI's QC criteria.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

The MS/MSD recoveries and RPD associated with these analyses were within QC criteria.

Matrix Duplicate (MD)

The MD RPD associated with these analyses was within QC criteria.

Serial Dilution (SD)

The SD RPD was within QC criteria.

Calibration Blanks (CB)

All of the CBs associated with these analyses had concentrations that were <CRDL.

Client Required Quantitation Limit (CRQL)

The CRDLs associated with this analysis were within QC criteria, with the exception of the ending CCV, which was outside of QC criteria low.

Qualifier Information:

Manual qualifiers were applied as specified in EPA's Contract Laboratory Program (CLP).

Review Validation:

All data received a second and third level review. The following data reviewer verified the information presented in this case narrative

Reviewer:

John W. Briggs

Date: 6/09/2009

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-007B

Level: LOW Date Collected: 05-20-2009 12:30:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.025 mg/L	0.009	U	05-26-2009 22:41:10	5.000	6010B ICP TCLP
7440-39-3	Barium	0.221 mg/L	0.0008		05-26-2009 22:41:10	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:41:10	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0100 mg/L	0.0012	U	05-26-2009 22:41:10	5.000	6010B ICP TCLP
7439-92-1	Lead	0.025 mg/L	0.009	U	05-26-2009 22:41:10	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.0000507 mg/L	0.0000001	B	05-26-2009 11:30:27	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.031 mg/L	0.025	B	05-26-2009 22:41:10	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:41:10	5.000	6010B ICP TCLP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-002A

Level: LOW Date Collected: 05-21-2009 12:35:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:31:00	1.000	6010B ICP
7440-39-3	Barium	0.00048 mg/L	0.00015	B	05-26-2009 23:31:00	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:31:00	1.000	6010B ICP
7440-47-3	Chromium	0.00072 mg/L	0.00025	B	05-26-2009 23:31:00	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:31:00	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:11:42	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:31:00	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:31:00	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-DECON PAD FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-004A

Level: LOW Date Collected: 05-21-2009 12:36:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:33:59	1.000	6010B ICP
7440-39-3	Barium	0.00045 mg/L	0.00015	B	05-26-2009 23:33:59	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:33:59	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:33:59	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:33:59	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:13:34	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:33:59	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:33:59	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-009A

Level: LOW Date Collected: 05-21-2009 14:16:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:36:59	1.000	6010B ICP
7440-39-3	Barium	0.00232 mg/L	0.00015	B	05-26-2009 23:36:59	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:36:59	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:36:59	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-26-2009 23:36:59	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:15:26	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:36:59	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:36:59	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-IDW GREY B25 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-011A

Level: LOW Date Collected: 05-21-2009 14:15:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:43:02	1.000	6010B ICP
7440-39-3	Barium	0.00063 mg/L	0.00015	B	05-26-2009 23:43:02	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:43:02	1.000	6010B ICP
7440-47-3	Chromium	0.00064 mg/L	0.00025	B	05-26-2009 23:43:02	1.000	6010B ICP
7439-92-1	Lead	0.00500 mg/L	0.00175	U	05-28-2009 17:59:22	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:17:17	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:43:02	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:43:02	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 EB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-015A

Level: LOW Date Collected: 05-21-2009 11:35:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:46:06	1.000	6010B ICP
7440-39-3	Barium	0.00073 mg/L	0.00015	B	05-26-2009 23:46:06	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:46:06	1.000	6010B ICP
7440-47-3	Chromium	0.00086 mg/L	0.00025	B	05-26-2009 23:46:06	1.000	6010B ICP
7439-92-1	Lead	0.00234 mg/L	0.00175	B	05-28-2009 18:00:52	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:22:57	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:46:06	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:46:06	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-L-SU1S B002-7 FB

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: WATER Lab Sample ID: 09050618-017A

Level: LOW Date Collected: 05-21-2009 11:35:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.00500 mg/L	0.00189	U	05-26-2009 23:49:11	1.000	6010B ICP
7440-39-3	Barium	0.00126 mg/L	0.00015	B	05-26-2009 23:49:11	1.000	6010B ICP
7440-43-9	Cadmium	0.00500 mg/L	0.00021	U	05-26-2009 23:49:11	1.000	6010B ICP
7440-47-3	Chromium	0.00200 mg/L	0.00025	U	05-26-2009 23:49:11	1.000	6010B ICP
7439-92-1	Lead	0.00265 mg/L	0.00175	B	05-28-2009 18:02:22	1.000	6010B ICP
7439-97-6	Mercury	0.200 ug/L	0.092	U	05-26-2009 12:24:52	1.000	SW846 7470A CVAA
7782-49-2	Selenium	0.0100 mg/L	0.005	U	05-26-2009 23:49:11	1.000	6010B ICP
7440-22-4	Silver	0.00500 mg/L	0.00074	U	05-26-2009 23:49:11	1.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-IDW GREY

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: SOLID Lab Sample ID: 09050618-013A

Level: LOW Date Collected: 05-20-2009 14:10:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	7.20 mg/kg	0.946		05-29-2009 14:54:34	10.000	6010B ICP
7440-39-3	Barium	7.52 mg/kg	0.077		05-29-2009 14:54:34	10.000	6010B ICP
7440-43-9	Cadmium	0.605 mg/kg	0.107	BN	05-27-2009 20:01:14	10.000	6010B ICP
7440-47-3	Chromium	3.30 mg/kg	0.124		05-29-2009 14:54:34	10.000	6010B ICP
7439-92-1	Lead	9.69 mg/kg	0.873		05-27-2009 20:01:14	10.000	6010B ICP
7439-97-6	Mercury	6.52 ug/Kg	4.6	B	05-27-2009 11:08:31	1.000	SW846 7471B CVAA
7782-49-2	Selenium	5.00 mg/kg	2.5	UN	05-27-2009 20:01:14	10.000	6010B ICP
7440-22-4	Silver	2.50 mg/kg	0.371	UN	05-27-2009 20:01:14	10.000	6010B ICP

1A-IN / 1B-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PNV-SO-SU1S B002-7

Lab Name: Assaigai Analytical Laboratories, Inc. Contract: NA

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PNV-L-DECON PAD

Matrix: TCLP Lab Sample ID: 09050618-019B

Level: LOW Date Collected: 05-20-2009 11:35:00

% Solids: NA Date Received: 05-22-2009

CAS No.	Analyte	Concentration	IDL (Adjusted)	Q	Date Analyzed	Dilution Factor	Method
7440-38-2	Arsenic	0.025 mg/L	0.009	U	05-26-2009 22:44:10	5.000	6010B ICP TCLP
7440-39-3	Barium	0.929 mg/L	0.0008		05-26-2009 22:44:10	5.000	6010B ICP TCLP
7440-43-9	Cadmium	0.0250 mg/L	0.0011	U	05-26-2009 22:44:10	5.000	6010B ICP TCLP
7440-47-3	Chromium	0.0100 mg/L	0.0012	U	05-26-2009 22:44:10	5.000	6010B ICP TCLP
7439-92-1	Lead	0.025 mg/L	0.009	U	05-26-2009 22:44:10	5.000	6010B ICP TCLP
7439-97-6	Mercury	0.000200 mg/L	0.0000001	U	05-26-2009 11:32:19	1.000	7470A CVAA TCLP
7782-49-2	Selenium	0.050 mg/L	0.025	U	05-26-2009 22:44:10	5.000	6010B ICP TCLP
7440-22-4	Silver	0.025 mg/L	0.004	U	05-26-2009 22:44:10	5.000	6010B ICP TCLP

IDW and RCRA Sample Chain of Custodies

ARS INTERNATIONAL
2609 North River Road
Port Allen, LA 70767-3469
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FX: (225) 381-2996
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COC No. PNV-010

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, eshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Master Loop
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505-315-5964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

5-22-09 VHM Total Metals
5-22-09 VOA

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	~~Isotopic Thorium~~	~~Isotopic Uranium~~	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-SO-SU23SB005-52009 X	1	S	4C				X				
02	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C				X				
03	~~5/20/09~~		~~PNV-L-SU23-SB005-52009(TRIP BLANK)~~	1	L	4C								
04	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C					5-22-09 VHM	X	X	X
05	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE)	1	S	4C					X	X	X	X
06	5/20/09		PNV-L-SU23SB005-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 VHM				
07	5/20/09		PNV-SO-SU23SB005-52009(DUPLICATE) 5-22-09 VHM	1	S	4C				X	5-22-09 VHM			
08	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C						X	X	X
09	5/20/09		PNV-L-SU23SB005-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
10	5/20/09		PNV-L-SU23SB006-52009 (FIELD BLANK)	1	L	4C		X	X	5-21-09 VHM				
11	5/20/09		PNV-L-SU23SB006-52009 (TRIP BLANK)	1	L	4C			X	5-21-09 VHM				
12	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C				X				
13	5/20/09		PNV-L-SU23SB006-52009(EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
14	5/20/09		PNV-SO-SU23SB006-52009	1	S	4C					X			X
15	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C					X	X	X	X
16	5/20/09		PNV-L-SU23SB001-52009 (EQUIPMENT BLANK)	1	L	4C		X	X	5-21-09 VHM				
17	5/20/09		PNV-SO-SU23SB005-52009 (MS/MSD)	1	S	4C				X	X 5-22-09 VHM			X 5-22-09 VHM
18	5/20/09		PNV-SO-SU23SB001-52009	1	S	4C						X	X	

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-20-09 Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature	[signature]	5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	05/22/09	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

ARS INTERNATIONAL
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COC No. PNV-01

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
Port Allen, LA 70767-3469
Phone #: (225) 381-2991 Fax #: (225) 381-2996
Email: ProjectManagers@amrad.com, mkrohn@amrad.com, sshirley@amrad.com
Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: ~~ARS International~~ Assaigai
Project Manager: Project Management
Address: ~~2609 North River Rd~~ 4301 Masthead
~~Port Allen, LA 70767-3469~~ Albuquerque N
Phone: ~~(225) 381-2991~~ 505.345.8964
Fax: ~~(225) 381-2996~~
Email: ~~ProjectManagers@amrad.com~~

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	~~Isotopic Thorium~~	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/20/09		PNV-L-SU23SB005-52009(TRIP BLANK)	1	L	4C			X	5-22-09 DHM				
02	5/20/09		PNV-L-SU23SB001-52009(FIELD BLANK)	1	L	4C		X	X					
03	5/20/09		PNV-SO0SU23SB001-52009 X	1	S	4C				X				
04	5/20/09		PNV-L-SU23SB001-52009(TRIP BLANK)	1	L	4C			X	5-22-09 DHM				
05	5/20/09		PNV-SO-SU23SB005-52009	1	S	4C				X				
06	5/20/09		PNV-SO-SU23SB005-52009(MS/MSD)	1	S	4C				X				
07	5/20/09		PNV-L-SU23SB002-52009(FIELD BLANK)	1	L	4C		X	X	5-22-09 DHM				
08	5/20/09		PNV-L-SU23SB002-52009(EQUIPMENT BLANK)	1	L	4C		X	X					
09	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C				X				
10	5/20/09		PNV-L-SU23SB002-52009(TRIP BLANK)	1	L	4C			X	5-22-09 DHM				
11	5/20/09		PNV-SO-SU23SB002-52009 X	1	S	4C					X		X	
12	5/20/09		PNV-SO-SU23SB002-52009	1	S	4C						X		X
13	5/20/09		PNV-L-SU23-52009 (TEMPERATURE BLANK)	1	L	4C								
14	5/20/09		PNV-SO-SU23SB006-52009 X	1	S	4C						X	X	
15														
16														
17														
18														

Total Metals 5-22-09 DHM
VOA 5-20-09

Method of Shipment: NEXT DAY AIR
Date & Time of Shipment: 5-20-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0069
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-20-09	5:00	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew D. Eden	052209	0705
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

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COC No. PNV-017

Company Name: ARS International
Client Contact: Project Management
Address: 2609 North River Road
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Email: alombardo@sec-tn.com

Purchase Order:
Job #: BID & RFP-USCOE-09027
Contract #: W912P4-07-D-0009

7 DAY TURN AROUND FROM THE COLLECTION OF SAMPLE(S)

Sent To: Assaigai Analytical Laboratory
Project Manager:
Address: 4301 Masthead N.E.
Albuquerque, NM 87109
Phone: 505-345-8964
Fax: 505-345-7259
Email:

SAMPLE No.	Date	Time	Sample Description	# of Containers	Matrix Type*	Temperature	EPA 903.1 Ra-226	Isotopic Thorium	Isotopic Uranium	TCLP VOA	TCLP SVOA	TCLP PESTICIDES	TCLP PCBs	TCLP TAL Metals
01	5/21/09	11:35	PNV-L-SU1SB002-7-052109(EQUIPMENT BLANK)	1	L	4C		X	X	5-22-09 2HM				
02	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C					X		X	
03	5/21/09	11:35	PNV-L-SU1SB002-7-052109(FIELD BLANK)	1	L	4C		X	X	5-22-09 2HM				
04	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C						X		X
05	5/21/09	11:35	PNV-SO-SU1SB002-7-052109	1	S	4C				X				
06	5/21/09	11:35	PNV-SO-SU1SB002-7-052109(TRIP BLANK)	1	L	4C			X	5-22-09 2HM				
07	5/21/09	12:31	DECON PAD WATER	1	L	4C				X				
08	5/21/09	12:35	DECON PAD EQUIPMENT BLANK	1	L	4C		X	X					
09	5/21/09	12:36	DECON PAD FIELD BLANK	1	L	4C		X	X	5-22-09 2HM				
10	5/21/09	12:30	DECON PAD WATER CONTAINER 1 OF 2	1	L	4C					X		X	
11	5/21/09	12:30	DECON PAD WATER CONTAINER 2 OF 2	1	L	4C						X		X
12	5/21/09	14:10	IDW GREY B25 BOX 1 OF 2	1	S	4C					X		X	
13	5/21/09	14:10	IDW GREY B25 BOX 2 OF 2	1	S	4C						X		X
14	5/21/09	14:12	IDW GREY B25 BOX	1	S	4C				X				
15	5/21/09	14:15	IDW GREY B25 FIELD BLANK	1	L	4C		X	X	5-22-09 2HM				
16	5/21/09	14:16	IDW GREY B25 EQUIPMENT BLANK	1	L	4C		X	X	5-22-09 2HM				
17														
18														

Method of Shipment: Next Day Air
Date & Time of Shipment: 5-21-09
Courier: UPS
Air Bill Number: 12 7R0 57F 23 1000 0087
Samplers Name (Print): Eric Schmitt
Samplers Signature:
Special Instructions:

	Relinquished by	Date	Time	Received by	Date	Time
Signature		5-21-09	4:10	UPS		
Printed Name	Eric Schmitt					
Signature	UPS			Matthew L. Eden	052209	1100
Printed Name				Mat Eden		

* Types of sample: S: solids/soil | L: liquid | DW: Drinking Water | SW: Surface Water | PW: Produced Water | Sm: Smear | LT: Leak Test | AF: Air Filter | Si: Silica Gel | VG: vegetation | Bio: Bioassay | Sludge

Cooler temp: 5.0°C

Appendix J. Instrument Quality Assurance/Quality Control

Survey Instrument and Air Sampler Calibration Records

Daily Survey Instrument Pre-Operational Check Forms

Survey Instrument and Air Sampler Calibration Records

Safety and Ecology Corporation

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

SEC PROCEDURE # SEC-IS-418

4/8/2009

Calibration Certificate for 2360,Serial # 234860, Bar Code # ,Property # SEC-6365

Date: 04/08/09 Date Last Cal. Expires: 03/20/10 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2 SERIAL #: 190580 CAL DUE: 07/23/09

MODEL: SERIAL #: CAL DUE:

AS FOUND DATA Geotropism: SAT AS FOUND Instrument Condition: SAT AS LEFT Instrument Condition: SAT

☐ New Batteries? Battery Check: SAT AS FOUND Mechanical Zero: 0 AS LEFT Mechanical Zero: 0

HIGH VOLTAGE (+/- 10% tolerance)	AS FOUND HV	AS LEFT HV
500 V:	509 V	AF V
1000 V:	1004 V	AF V
1500 V:	1505 V	AF V
AF HV Setting:	1573 V	AL HV Setting: 880 V

WINDOW SETTINGS	AS FOUND	AS LEFT
BT (4 mV +/- .4 mV):	3.8 mV	4 mV
BW (40 mV +/- 4 mV):	39.5 mV	40 mV
AT (120 mV +/- 10 mV):	118 mV	120 mV

RATE METER

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

☑ Is the As Found Data Within 20% of the Set Point?

DIGITAL SCALER

AF 250:	250	% ERR: 0.00%	AL 250:	AF	% ERR: 0.00%
AF 2500:	2499	% ERR: 0.04%	AL 2500:	AF	% ERR: 0.04%
AF 25K:	24.99 K	% ERR: 0.04%	AL 25K:	AF K	% ERR: 0.04%
AF 250K:	249.9 K	% ERR: 0.04%	AL 250K:	AF K	% ERR: 0.04%

☑ Is the As Found Data Within 20% of the Set Point?

REPRODUCIBILITY

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

☑ Are the Individual Counts Within 10% of the Average?

Audio Response: SAT

Overload Light: SAT

Low Battery (2.2V): SAT

Comments: Married as a set with: Model: 43-93 Serial #: PR238091 Bar Code #:

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/08/10

Performed by: Reviewed by: Date: 4/8/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4-8-09

SEC PROCEDURE # SEC-IS-420

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

4/8/2009

Calibration Certificate for 43-93,Serial # PR238091, Bar Code # ,Property # SEC-6373

Date: 04/08/09 Date Last Cal. Expires: 04/17/08 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Repair

EQUIPMENT USED DURING CALIBRATION MODEL: 2360 SERIAL #: 234860 CAL DUE 04/08/10

MODEL: SERIAL #: CAL DUE

NIST TRACEABLE SOURCES USED	SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
	4071-02	Th-230	40600 dpm	20,600 cpm	1/10/2008
	4072-02	Tc-99	27700 dpm	17,300 cpm	1/10/2008
	4076-02	Sr-90	13300 dpm	9,300 cpm	1/10/2008
	4079-02	Pu-239	28700 dpm	14,600 cpm	1/10/2008

AS FOUND DATA AS FOUND Instrument Condition: UNSAT

Calibration Setpoints

HV : 880 V

Threshold Beta: 4 - 40 mV Alpha: 120 mV

Efficiencies from last calibration	
Pu:	23.86 %
Tc:	16.22 %
Th:	19.87 %
SrY:	32.77 %

	Alpha		Beta		A-B XTLK
Back ground:	0	CPM	0	CPM	
Pu-239:	0	CPM	0	CPM	#Div/0!
Tc-99:	0	CPM	0	CPM	
Th-230:	0	CPM	N/A		
SrY-90:	N/A		0	CPM	

AS FOUND Efficiencies: Pu-239: 0.00% Tc-99: 0.00% Th-230: 0.00% SrY-90: 0.00%

AS LEFT Instrument Condition: SAT

AS LEFT DATA after repair or HV adjust

HV : V

	Alpha		Beta		A-B XTLK
Back ground:	0	CPM	273	CPM	
Pu-239:	6882	CPM	952	CPM	9.0%
Tc-99:	1	CPM	4153	CPM	
Th-230:	8586	CPM	N/A		
SrY-90:	N/A		4619	CPM	

AS LEFT Efficiencies: Pu-239: 23.98% Tc-99: 14.01% Th-230: 21.15% SrY-90: 32.68%

☐ Is the As Found Data Within 20% of the efficiency from the last cal.?

Reproducibility : Isotope: Sr-90 4738 4784 4693 Average: 4738.3 ☑ Are the individual counts within 10% of the average?

If the As Found data (even after repair) is within 10% of the last calibration and the B-A Xtalk is <1% and the A-B Xtalk is <10%, then the technician may N/A the Plateau Data and go directly to Comments. Geometry of source = flush to surface, except gas proportional probes = 1/8" from surface unless otherwise specified.

PLATEAU DATA Source 1: Tc-99 Source 2: Th-230

High Voltage	Source 1 Response (CPM) A ch.	B ch.	Net Eff.	Source 2 Response (CPM) A ch.	B ch.	Net Eff.	Background (CPM) A ch.	B ch.	Net A to B Xtalk: <10%
N/A									N/A
									N/A
									N/A
									N/A
									N/A
									N/A

	Alpha	Beta	HV	Pu-239	Tc-99	Th-230	SrY-90
Background:			V	CPM	CPM	CPM	CPM
AL Efficiencies:							

Comments: Married as a set with: Model: 2360 Serial #: 234860 Bar Code #:

Replaced mylar. Calibrated with different sources.

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/08/10

Performed by: Reviewed by: Date: 4/8/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4·8·09

Safety and Ecology Corporation

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

Calibration Certificate for 2360,Serial # 184900, Bar Code # ,Property # SEC-5248

Date: 04/07/09 Date Last Cal. Expires: 10/06/09 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2 SERIAL #: 190580 CAL DUE: 07/23/09

MODEL: SERIAL #: CAL DUE:

AS FOUND DATA Geotropism: SAT AS FOUND Instrument Condition: SAT AS LEFT Instrument Condition: SAT

☐ New Batteries? Battery Check: SAT AS FOUND Mechanical Zero: 0 AS LEFT Mechanical Zero: 0

HIGH VOLTAGE (+/- 10% tolerance)		AS FOUND HV	AS LEFT HV
	500 V:	500 V	AF V
	1000 V:	1000 V	AF V
	1500 V:	1500 V	AF V
	AF HV Setting:	1668 V	AL HV Setting: 775 V

WINDOW SETTINGS	AS FOUND	AS LEFT
BT (4 mV +/- .4 mV):	3.4 mV	4 mV
BW (40 mV +/- 4 mV):	37.2 mV	40 mV
AT (120 mV +/- 10 mV):	89 mV	120 mV

RATE METER

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

☑ Is the As Found Data Within 20% of the Set Point?

DIGITAL SCALER

AF 250:	250	% ERR: 0.00%	AL 250:	AF	% ERR: 0.00%
AF 2500:	2499	% ERR: 0.04%	AL 2500:	AF	% ERR: 0.04%
AF 25K:	24.99 K	% ERR: 0.04%	AL 25K:	AF K	% ERR: 0.04%
AF 250K:	249.9 K	% ERR: 0.04%	AL 250K:	AF K	% ERR: 0.04%

☑ Is the As Found Data Within 20% of the Set Point?

REPRODUCIBILITY

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

☑ Are the Individual Counts Within 10% of the Average?

Audio Response: SAT

Overload Light: SAT

Low Battery (2.2V): SAT

Comments: Married as a set with: Model: 43-93 Serial #: PR244501 Bar Code #:

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/07/10

Performed by: Reviewed by: Date: 4/7/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4-7-09

SEC PROCEDURE # SEC-IS-420

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

4/7/2009

Calibration Certificate for 43-93,Serial # PR244501, Bar Code # ,Property # SEC-6462

Date: 04/07/09 Date Last Cal. Expires: 04/30/09 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Due for Calibration

EQUIPMENT USED DURING CALIBRATION MODEL: 2360 SERIAL #: 184900 CAL DUE 04/07/10

MODEL: SERIAL #: CAL DUE

NIST TRACEABLE SOURCES USED	SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
	4071-02	Th-230	40600 dpm	20,600 cpm	1/10/2008
	4072-02	Tc-99	27700 dpm	17,300 cpm	1/10/2008
	4076-02	Sr-90	13300 dpm	9,300 cpm	1/10/2008
	4079-02	Pu-239	28700 dpm	14,600 cpm	1/10/2008

AS FOUND DATA AS FOUND Instrument Condition: SAT

Calibration Setpoints

HV : 775 V

Threshold Beta: 4 - 40 mV Alpha: 120 mV

Efficiencies from last calibration	
Pu:	25.02 %
Tc:	16.04 %
Th:	21.40 %
SrY:	36.80 %

	Alpha		Beta		A-B XTLK
Back ground:	0	CPM	237	CPM	
Pu-239:	6840	CPM	791	CPM	8.1%
Tc-99:	1	CPM	4977	CPM	
Th-230:	8754	CPM	N/A		
SrY-90:	N/A		5169	CPM	

AS FOUND Efficiencies: Pu-239: 23.83% Tc-99: 17.11% Th-230: 21.56% SrY-90: 37.08%

AS LEFT Instrument Condition: SAT

AS LEFT DATA after repair or HV adjust

HV : V

	Alpha		Beta		A-B XTLK
Back ground:		CPM		CPM	
Pu-239:		CPM		CPM	
Tc-99:		CPM		CPM	
Th-230:		CPM	N/A		
SrY-90:	N/A			CPM	

AS LEFT Efficiencies: Pu-239: Tc-99: Th-230: SrY-90:

☑ Is the As Found Data Within 20% of the efficiency from the last cal.?

Reproducibility : Isotope: Sr-90 4949 4933 4978 Average: 4953.3 ☑ Are the individual counts within 10% of the average?

If the As Found data (even after repair) is within 10% of the last calibration and the B-A Xtalk is <1% and the A-B Xtalk is <10%, then the technician may N/A the Plateau Data and go directly to Comments. Geometry of source = flush to surface, except gas proportional probes = 1/8" from surface unless otherwise specified.

PLATEAU DATA Source 1: Tc-99 Source 2: Th-230

High Voltage	Response (CPM) A ch.	B ch.	Net Eff.	Response (CPM) A ch.	B ch.	Net Eff.	Background (CPM) A ch.	B ch.	Net A to B Xtalk: <10%
N/A									N/A
									N/A
									N/A
									N/A
									N/A
									N/A

	Alpha	Beta	HV	Pu-239	Tc-99	Th-230	SrY-90
Background:			V	CPM	CPM	CPM	CPM
AL Efficiencies:							

Comments: Married as a set with: Model: 2360 Serial #: 184900 Bar Code #:

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/07/10

Performed by: Reviewed by: Date: 4/7/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4.7.09

Safety and Ecology Corporation

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

SEC PROCEDURE # SEC-IS-418

4/8/2009

Calibration Certificate for 2360,Serial # 227433, Bar Code # ,Property # SEC-6109

Date: 04/08/09 Date Last Cal. Expires: 03/25/10 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2 SERIAL #: 190580 CAL DUE: 07/23/09

MODEL: SERIAL #: CAL DUE:

AS FOUND DATA Geotropism: SAT AS FOUND Instrument Condition: SAT AS LEFT Instrument Condition: SAT

☐ New Batteries? Battery Check: SAT AS FOUND Mechanical Zero: 0 AS LEFT Mechanical Zero: 0

HIGH VOLTAGE (+/- 10% tolerance)	AS FOUND HV	AS LEFT HV
500 V:	503 V	AF V
1000 V:	1000 V	AF V
1500 V:	1497 V	AF V
AF HV Setting:	878 V	AL HV Setting: 725 V

WINDOW SETTINGS	AS FOUND	AS LEFT
BT (4 mV +/- .4 mV):	3.3 mV	4 mV
BW (40 mV +/- 4 mV):	42.2 mV	40 mV
AT (120 mV +/- 10 mV):	120 mV	AF mV

RATE METER

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

☑ Is the As Found Data Within 20% of the Set Point?

DIGITAL SCALER

AF 250:	250	% ERR: 0.00%	AL 250:	AF	% ERR: 0.00%
AF 2500:	2499	% ERR: 0.04%	AL 2500:	AF	% ERR: 0.04%
AF 25K:	24.99 K	% ERR: 0.04%	AL 25K:	AF K	% ERR: 0.04%
AF 250K:	249.9 K	% ERR: 0.04%	AL 250K:	AF K	% ERR: 0.04%

☑ Is the As Found Data Within 20% of the Set Point?

REPRODUCIBILITY

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

☑ Are the Individual Counts Within 10% of the Average?

Audio Response: SAT

Overload Light: SAT

Low Battery (2.2V): SAT

Comments: Married as a set with: Model: 43-93 Serial #: PR244501 Bar Code #:

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/08/10

Performed by: Reviewed by: Date: 4/8/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4.8.09

SEC PROCEDURE # SEC-IS-420

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

4/8/2009

Calibration Certificate for 43-93,Serial # PR244541, Bar Code # ,Property # SEC-6372

Date: 04/08/09 Date Last Cal. Expires: 04/09/08 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Repair

EQUIPMENT USED DURING CALIBRATION MODEL: 2360 SERIAL #: 227433 CAL DUE 04/08/10

MODEL: SERIAL #: CAL DUE

NIST TRACEABLE SOURCES USED	SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
	4071-02	Th-230	40600 dpm	20,600 cpm	1/10/2008
	4072-02	Tc-99	27700 dpm	17,300 cpm	1/10/2008
	4076-02	Sr-90	13300 dpm	9,300 cpm	1/10/2008
	4079-02	Pu-239	28700 dpm	14,600 cpm	1/10/2008

AS FOUND DATA AS FOUND Instrument Condition: UNSAT

Calibration Setpoints

HV : 775 V

Threshold Beta: 4 - 40 mV Alpha: 120 mV

Efficiencies from last calibration	
Pu:	21.29 %
Tc:	10.63 %
Th:	17.96 %
SrY:	28.12 %

	Alpha		Beta		A-B XTLK
Back ground:	0	CPM	0	CPM	
Pu-239:	0	CPM	0	CPM	#Div/0!
Tc-99:	0	CPM	0	CPM	
Th-230:	0	CPM	N/A		
SrY-90:	N/A		0	CPM	

AS FOUND Efficiencies: Pu-239: 0.00% Tc-99: 0.00% Th-230: 0.00% SrY-90: 0.00%

AS LEFT Instrument Condition: SAT

AS LEFT DATA after repair or HV adjust

HV : V

	Alpha		Beta		A-B XTLK
Back ground:	2	CPM	385	CPM	
Pu-239:	6660	CPM	1077	CPM	9.4%
Tc-99:	2	CPM	5437	CPM	
Th-230:		CPM	N/A		
SrY-90:	N/A			CPM	

AS LEFT Efficiencies: Pu-239: 23.20% Tc-99: 18.24% Th-230: SrY-90:

☐ Is the As Found Data Within 20% of the efficiency from the last cal.?

Reproducibility : Isotope: Sr-90 4640 4693 4583 Average: 4638.7 ☑ Are the individual counts within 10% of the average?

If the As Found data (even after repair) is within 10% of the last calibration and the B-A Xtalk is <1% and the A-B Xtalk is <10%, then the technician may N/A the Plateau Data and go directly to Comments. Geometry of source = flush to surface, except gas proportional probes = 1/8" from surface unless otherwise specified.

PLATEAU DATA Source 1: Tc-99 Source 2: Pu-239

High Voltage	Source 1 Response (CPM) A ch.	B ch.	Net Eff.	Source 2 Response (CPM) A ch.	B ch.	Net Eff.	Background (CPM) A ch.	B ch.	Net A to B Xtalk: <10%
700	1	3090	10.51%	6563	415	22.87%	0	178	3.61%
725	6	4103	13.98%	6760	564	23.55%	1	230	4.94%
750	3	5008	16.83%	6799	945	23.69%	1	347	8.80%
775	2	5437	18.24%	6660	1077	23.20%	2	385	10.39%

	Alpha	Beta	HV	Pu-239	Tc-99	Th-230	SrY-90
Background:	1	253	725 V	6728 CPM	4291 CPM	8151 CPM	4599 CPM
AL Efficiencies:				23.44%	14.58%	20.07%	32.68%

Comments: Married as a set with: Model: 2360 Serial #: 227433 Bar Code #:

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/08/10

Performed by: Reviewed by: Date: 4/8/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4.8.09

Safety and Ecology Corporation

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

SEC PROCEDURE # SEC-IS-418

4/13/2009

Calibration Certificate for 2360,Serial # 170550, Bar Code # ,Property # SEC-5079

Date: 04/13/09 Date Last Cal. Expires: 03/20/10 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Other (See Comments)

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2 SERIAL #: 190580 CAL DUE: 07/23/09

MODEL: SERIAL #: CAL DUE:

AS FOUND DATA Geotropism: SAT AS FOUND Instrument Condition: SAT AS LEFT Instrument Condition: SAT

☐ New Batteries? Battery Check: SAT AS FOUND Mechanical Zero: 0 AS LEFT Mechanical Zero: 0

HIGH VOLTAGE (+/- 10% tolerance)	AS FOUND HV	AS LEFT HV
500 V:	503 V	AF V
1000 V:	1000 V	AF V
1500 V:	1500 V	AF V
AF HV Setting:	1739 V	AL HV Setting: 830 V

WINDOW SETTINGS	AS FOUND	AS LEFT
BT (4 mV +/- .4 mV):	4 mV	AF mV
BW (40 mV +/- 4 mV):	40 mV	AF mV
AT (120 mV +/- 10 mV):	120 mV	AF mV

RATE METER

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

☑ Is the As Found Data Within 20% of the Set Point?

DIGITAL SCALER

AF 250:	250	% ERR: 0.00%	AL 250:	AF	% ERR: 0.00%
AF 2500:	2499	% ERR: 0.04%	AL 2500:	AF	% ERR: 0.04%
AF 25K:	24.99 K	% ERR: 0.04%	AL 25K:	AF K	% ERR: 0.04%
AF 250K:	249.9 K	% ERR: 0.04%	AL 250K:	AF K	% ERR: 0.04%

☑ Is the As Found Data Within 20% of the Set Point?

REPRODUCIBILITY

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

☑ Are the Individual Counts Within 10% of the Average?

Audio Response: SAT

Overload Light: SAT

Low Battery (2.2V): SAT

Comments: Married as a set with: Model: 43-93 Serial #: PR244506 Bar Code #:

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/13/10

Performed by: Reviewed by: Date: 4/13/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4.13.09

SEC PROCEDURE # SEC-IS-420

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

4/13/2009

Calibration Certificate for 43-93,Serial # PR244506, Bar Code # ,Property # SEC-6463

Date: 04/13/09 Date Last Cal. Expires: 08/22/08 Technician: Thomas Thompson

Location: 9999, Reason For Calibration: Other (See Comments)

EQUIPMENT USED DURING CALIBRATION MODEL: 2360 SERIAL #: 170550 CAL DUE 04/13/10

MODEL: SERIAL #: CAL DUE

NIST TRACEABLE SOURCES USED	SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
	4071-02	Th-230	40600 dpm	20,600 cpm	1/10/2008
	4072-02	Tc-99	27700 dpm	17,300 cpm	1/10/2008
	4076-02	Sr-90	13300 dpm	9,300 cpm	1/10/2008
	4079-02	Pu-239	28700 dpm	14,600 cpm	1/10/2008

AS FOUND DATA AS FOUND Instrument Condition: SAT

Calibration Setpoints

HV : 830 V

Threshold Beta: 4 - 40 mV Alpha: 120 mV

Efficiencies from last calibration	
Pu:	24.03 %
Tc:	16.37 %
Th:	19.65 %
SrY:	33.58 %

	Alpha		Beta		A-B XTLK
Back ground:	0	CPM	0	CPM	
Pu-239:	0	CPM	0	CPM	#Div/0!
Tc-99:	0	CPM	0	CPM	
Th-230:	0	CPM	N/A		
SrY-90:	N/A		0	CPM	

AS FOUND Efficiencies: Pu-239: 0.00% Tc-99: 0.00% Th-230: 0.00% SrY-90: 0.00%

AS LEFT Instrument Condition: SAT

AS LEFT DATA after repair or HV adjust

HV : V

	Alpha		Beta		A-B XTLK
Back ground:	2	CPM	177	CPM	
Pu-239:	6749	CPM	674	CPM	6.9%
Tc-99:	0	CPM	4050	CPM	
Th-230:	8413	CPM	N/A		
SrY-90:	N/A		4576	CPM	

AS LEFT Efficiencies: Pu-239: 23.51% Tc-99: 13.98% Th-230: 20.72% SrY-90: 33.08%

☐ Is the As Found Data Within 20% of the efficiency from the last cal.?

Reproducibility : Isotope: Sr-90 4588 4641 4513 Average: 4580.7 ☑ Are the individual counts within 10% of the average?

If the As Found data (even after repair) is within 10% of the last calibration and the B-A Xtalk is <1% and the A-B Xtalk is <10%, then the technician may N/A the Plateau Data and go directly to Comments. Geometry of source = flush to surface, except gas proportional probes = 1/8" from surface unless otherwise specified.

PLATEAU DATA Source 1: Tc-99 Source 2: Th-230

High Voltage	Source 1 Response (CPM) A ch.	B ch.	Net Eff.	Source 2 Response (CPM) A ch.	B ch.	Net Eff.	Background (CPM) A ch.	B ch.	Net A to B Xtalk: <10%
N/A									N/A
									N/A
									N/A
									N/A
									N/A
									N/A

	Alpha	Beta	HV	Pu-239	Tc-99	Th-230	SrY-90
Background:			V	CPM	CPM	CPM	CPM
AL Efficiencies:							

Comments: Married as a set with: Model: 2360 Serial #: 170550 Bar Code #:

Calibrated to different set of sources. Replaced mylar.

☑ Does Instrument Meet Final Acceptance Criteria? ☑ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: 04/13/10

Performed by: Reviewed by: Date: 4/13/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: Date: 4·13·09

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

SEC PROCEDURE # SEC-IS-403

5/13/2009

Calibration Certificate for 2221,Serial # 190170, Bar Code # ,Property # SEC-5298

Date: 05/11/09 **Date Last Cal. Expires:** 04/07/10 **Technician:** Thomas Thompson

Location: 136834, **Reason For Calibration:** Other (See Comments)

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2 **SERIAL #:** 190580 **CAL DUE:** 07/23/09

MODEL: **SERIAL #:** **CAL DUE:**

AS FOUND DATA **Geotropism:** SAT **AS FOUND Instrument Condition:** SAT **AS LEFT Instrument Condition:** SAT

HIGH VOLTAGE (+/- 10% tolerance)		AS FOUND HV	AS LEFT HV
	500 V:	502 V	AF V
	1000 V:	1000 V	AF V
	1500 V:	1496 V	AF V

New Batteries?		AF Mechanical Zero:	0
[redacted]		AL Mechanical Zero:	0
AF THRESHOLD:	10 mV	AF HV Reading:	1000 V
AL THRESHOLD:	10 mV	AL HV Reading:	625 V

[redacted]

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

AF 250:	250	% ERR:	0.00%	AL 250:	AF	% ERR:	0.00%
AF 2500:	2498	% ERR:	0.08%	AL 2500:	AF	% ERR:	0.08%
AF 25K:	24.98 K	% ERR:	0.08%	AL 25K:	AF K	% ERR:	0.08%
AF 250K:	249.8 K	% ERR:	0.08%	AL 250K:	AF K	% ERR:	0.08%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

AF 200:	200	% ERR:	0.00%	AL 200:	AF	% ERR:	0.00%
AF 2000:	2000	% ERR:	0.00%	AL 2000:	AF	% ERR:	0.00%
AF 20K:	20 K	% ERR:	0.00%	AL 20K:	AF K	% ERR:	0.00%
AF 200K:	200 K	% ERR:	0.00%	AL 200K:	AF K	% ERR:	0.00%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

✔ Are the Individual Counts Within 10% of the Average?

Audio Response:	SAT
Audio Divide:	SAT
Push Buttons:	SAT
Lamp:	SAT
Scaler/Digital:	SAT

✔ Fast / Slow Response Function Properly?

Comments: **Married as a set with:** **Model:** 44-20 **Serial #:** PR277116 **Bar Code #:**

✔ Does Instrument Meet Final Acceptance Criteria? ✔ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 5/11/09

Printed Name: Thomas Thompson

Entered in Computer Maintenance By: _____ **Date:** 5-13-09

SEC PROCEDURE # SEC-IS-415

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

5/13/2009

Calibration Certificate for 44-20,Serial # PR277116, Bar Code # ,Property # SEC-6920

Date: 05/11/09 **Date Last Cal. Expires:** **Technician:** Thomas Thompson

Location: 136834, **Reason For Calibration:** Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 2221 **SERIAL #:** 190170 **CAL DUE:** 05/11/10

MODEL: **SERIAL #:** **CAL DUE:**

NIST TRACEABLE SOURCES USED

SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
99CS250-0288	Cs-137	7.99 uCi		2/4/2009

Efficiency from Last Calibration: % **HV From Last Calibration:** V **Calibration Threshold:** 10 mV

1 MINUTE COUNTS (CPM)

AS FOUND DATA

AS FOUND Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

AS LEFT DATA after repair of HV adjust

AS LEFT Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

Is the As Found Efficiency Within 20% of the efficiency from the last cal.?

Reproducibility: **Isotope:** Cs-137 256423 257741 256491 **Average:** 256885 ✔ **Are the individual counts within 10% of the average?**

[redacted]

PLATEAU AND SET POINT DATA (CPM)

High Voltage	Source Response	Background
550	224257	4871
575	239786	6846
600	249412	7992
625	258561	9257
650	263026	9588
675	265187	9707
700	268047	10152
725	281619	12487

HV	CENTER	Background	Efficiency
625 V	256294	9283	Cs-137 [redacted]

Comments: **Married as a set with:** **Model:** 2221 **Serial #:** 190170 **Bar Code #:**

✔ **Does Instrument Meet Final Acceptance Criteria?** ✔ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 5/11/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: _____ **Date:** 5-13-09

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

SEC PROCEDURE # SEC-IS-403

5/13/2009

Calibration Certificate for 2221,Serial # 172031, Bar Code # ,Property # SEC-5047

Date: 05/11/09 **Date Last Cal. Expires:** 04/07/10 **Technician:** Thomas Thompson

Location: 136834, **Reason For Calibration:** Other (See Comments)

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2 **SERIAL #:** 190580 **CAL DUE:** 07/23/09

MODEL: **SERIAL #:** **CAL DUE:**

AS FOUND DATA **Geotropism:** SAT **AS FOUND Instrument Condition:** SAT **AS LEFT Instrument Condition:** SAT

HIGH VOLTAGE (+/- 10% tolerance)		AS FOUND HV	AS LEFT HV	New Batteries?		AF Mechanical Zero:	0
	500 V:	503 V	AF V	[redacted]		AL Mechanical Zero:	0
	1000 V:	1000 V	AF V	AF THRESHOLD:	10 mV	AF HV Reading:	1100 V
	1500 V:	1494 V	AF V	AL THRESHOLD:	10 mV	AL HV Reading:	625 V

[redacted]

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

AF 250:	250	% ERR:	0.00%	AL 250:	AF	% ERR:	0.00%
AF 2500:	2498	% ERR:	0.08%	AL 2500:	AF	% ERR:	0.08%
AF 25K:	24.98 K	% ERR:	0.08%	AL 25K:	AF K	% ERR:	0.08%
AF 250K:	249.8 K	% ERR:	0.08%	AL 250K:	AF K	% ERR:	0.08%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

AF 200:	200	% ERR:	0.00%	AL 200:	AF	% ERR:	0.00%
AF 2000:	2000	% ERR:	0.00%	AL 2000:	AF	% ERR:	0.00%
AF 20K:	20 K	% ERR:	0.00%	AL 20K:	AF K	% ERR:	0.00%
AF 200K:	200 K	% ERR:	0.00%	AL 200K:	AF K	% ERR:	0.00%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

✔ Are the Individual Counts Within 10% of the Average?

Audio Response: SAT
Audio Divide: SAT
Push Buttons: SAT
Lamp: SAT
Scaler/Digital: SAT

✔ Fast / Slow Response Function Properly?

Comments: **Married as a set with:** **Model:** 44-20 **Serial #:** PR277111 **Bar Code #:**

✔ Does Instrument Meet Final Acceptance Criteria? ✔ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 5/11/09

Printed Name: Thomas Thompson

Entered in Computer Maintenance By: _____ **Date:** 5-13-09

SEC PROCEDURE # SEC-IS-415

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

5/13/2009

Calibration Certificate for 44-20,Serial # PR277111, Bar Code # ,Property # SEC-6919

Date: 05/11/09 **Date Last Cal. Expires:** **Technician:** Thomas Thompson

Location: 136834, **Reason For Calibration:** Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 2221 **SERIAL #:** 172031 **CAL DUE:** 05/11/10

MODEL: **SERIAL #:** **CAL DUE:**

NIST TRACEABLE SOURCES USED

SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
99CS250-0288	Cs-137	7.99 uCi		2/4/2009

Efficiency from Last Calibration: % **HV From Last Calibration:** V **Calibration Threshold:** 10 mV

1 MINUTE COUNTS (CPM)

AS FOUND DATA

AS FOUND Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

AS LEFT DATA after repair of HV adjust

AS LEFT Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

Is the As Found Efficiency Within 20% of the efficiency from the last cal.?

Reproducibility: **Isotope:** Cs-137 256546 252242 253294 **Average:** 254027 ✔ **Are the individual counts within 10% of the average?**

[redacted]

PLATEAU AND SET POINT DATA (CPM)

High Voltage	Source Response	Background
575	205350	4391
600	225502	5719
625	239094	7277
650	247633	7810
675	256387	8700
700	258263	9558
725	257856	9427
750	264788	9862
775	272829	9844

HV	CENTER	Background	Efficiency
675 V	253963	8764	Cs-137 [redacted]

Comments: **Married as a set with:** **Model:** 2221 **Serial #:** 172031 **Bar Code #:**

✔ **Does Instrument Meet Final Acceptance Criteria?** ✔ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 5/11/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: _____ **Date:** 5·13·09

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

SEC PROCEDURE # SEC-IS-403

5/13/2009

Calibration Certificate for 2221,Serial # 152189, Bar Code # ,Property # SEC-6119

Date: 05/11/09 **Date Last Cal. Expires:** 04/07/10 **Technician:** Thomas Thompson

Location: 136834, **Reason For Calibration:** Other (See Comments)

EQUIPMENT USED DURING CALIBRATION

MODEL: 500-2	**SERIAL #:** 190580	**CAL DUE:** 07/23/09
MODEL:	**SERIAL #:**	**CAL DUE:**

AS FOUND DATA **Geotropism:** SAT **AS FOUND Instrument Condition:** SAT **AS LEFT Instrument Condition:** SAT

HIGH VOLTAGE (+/- 10% tolerance)	AS FOUND HV	AS LEFT HV
500 V:	503 V	AF V
1000 V:	1000 V	AF V
1500 V:	1494 V	AF V

New Batteries?		AF Mechanical Zero:	0
[redacted]		AL Mechanical Zero:	0
AF THRESHOLD:	10 mV	AF HV Reading:	950 V
AL THRESHOLD:	10 mV	AL HV Reading:	700 V

[redacted]

SCALE	RATE CPM	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100	0.00%	AF	0.00%
	250	250	0.00%	AF	0.00%
	400	400	0.00%	AF	0.00%
x1 or x10	1000	1000	0.00%	AF	0.00%
	2500	2500	0.00%	AF	0.00%
	4000	4000	0.00%	AF	0.00%
x10 or x100	10K	10	0.00%	AF	0.00%
	25K	25	0.00%	AF	0.00%
	40K	40	0.00%	AF	0.00%
x100 or x1000	100K	100	0.00%	AF	0.00%
	250K	250	0.00%	AF	0.00%
	400K	400	0.00%	AF	0.00%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

AF 250:	250	% ERR:	0.00%	AL 250:	AF	% ERR:	0.00%
AF 2500:	2498	% ERR:	0.08%	AL 2500:	AF	% ERR:	0.08%
AF 25K:	24.98 K	% ERR:	0.08%	AL 25K:	AF K	% ERR:	0.08%
AF 250K:	249.8 K	% ERR:	0.08%	AL 250K:	AF K	% ERR:	0.08%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

AF 200:	200	% ERR:	0.00%	AL 200:	AF	% ERR:	0.00%
AF 2000:	2000	% ERR:	0.00%	AL 2000:	AF	% ERR:	0.00%
AF 20K:	20 K	% ERR:	0.00%	AL 20K:	AF K	% ERR:	0.00%
AF 200K:	200 K	% ERR:	0.00%	AL 200K:	AF K	% ERR:	0.00%

✔ Is the As Found Data Within 20% of the Set Point?

[redacted]

x.1 or x1 Scale:	250	250	250
x1 or x10 Scale:	2500	2500	2500
x10 or x100 Scale:	25 K	25 K	25 K
x100 or x1000 Scale:	250 K	250 K	250 K

✔ Are the Individual Counts Within 10% of the Average?

Audio Response:	SAT
Audio Divide:	SAT
Push Buttons:	SAT
Lamp:	SAT
Scaler/Digital:	SAT

✔ Fast / Slow Response Function Properly?

Comments: Married as a set with: Model: 44-20 Serial #: PR277108 Bar Code #:

✔ Does Instrument Meet Final Acceptance Criteria? ✔ Calibration Sticker Attached?

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ Reviewed by: _____ Date: 5/11/09

Printed Name: Thomas Thompson

Entered in Computer Maintenance By: _____ Date: 5-13-09

SEC PROCEDURE # SEC-IS-415

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

5/12/2009

Calibration Certificate for 44-20,Serial # PR277108, Bar Code # ,Property # SEC-6907

Date: 05/11/09 **Date Last Cal. Expires:** 05/11/10 **Technician:** Thomas Thompson

Location: 9999, **Reason For Calibration:** Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 2221 **SERIAL #:** 152189 **CAL DUE:** 05/11/10

MODEL: **SERIAL #:** **CAL DUE:**

NIST TRACEABLE SOURCES USED

SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
99CS250-0288	Cs-137	7.99 uCi		2/4/2009

Efficiency from Last Calibration: % **HV From Last Calibration:** V **Calibration Threshold:** 10 mV

AS FOUND DATA — **1 MINUTE COUNTS (CPM)** — **AS LEFT DATA after repair of HV adjust**

AS FOUND Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

AS LEFT Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

Is the As Found Efficiency Within 20% of the efficiency from the last cal.?

Reproducibility: **Isotope:** Cs-137 260044 259683 259250 **Average:** 259659 ✔ **Are the individual counts within 10% of the average?**

[redacted]

PLATEAU AND SET POINT DATA (CPM)

High Voltage	Source Response	Background
550	226269	5690
575	241072	6897
600	248484	8000
625	255420	9114
650	258093	9645
675	262091	10280
700	274032	12449

HV	CENTER	Background	Efficiency
650 V	259690	9517	Cs-137 [redacted]

Comments: **Married as a set with:** **Model:** 2221 **Serial #:** 152189 **Bar Code #:**

Calibrated to a 5 foot cable.

✔ **Does Instrument Meet Final Acceptance Criteria?** ✔ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 5/11/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: _____ **Date:** 5·13·09

SEC PROCEDURE # SEC-IS-415

Safety and Ecology Corporation

2800 Solway Road, Knoxville, TN 37931

Calibration Certificate

5/12/2009

Calibration Certificate for 44-20,Serial # PR277108, Bar Code # ,Property # SEC-6907

Date: 05/11/09 **Date Last Cal. Expires:** **Technician:** Carl Hall

Location: 9999, **Reason For Calibration:** Due for Calibration

EQUIPMENT USED DURING CALIBRATION

MODEL: 2221 **SERIAL #:** 152189 **CAL DUE:** 05/11/10

MODEL: **SERIAL #:** **CAL DUE:**

NIST TRACEABLE SOURCES USED

SOURCE	ISOTOPE	ACTIVITY	2π	ASSAY DATE
99CS250-0288	Cs-137	7.99 uCi		2/4/2009

Efficiency from Last Calibration: % **HV From Last Calibration:** V **Calibration Threshold:** 10 mV

AS FOUND DATA | **1 MINUTE COUNTS (CPM)** | **AS LEFT DATA after repair of HV adjust**

AS FOUND Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

AS LEFT Instrument Condition: SAT

HV: V

Center:

Background:

Probe Efficiency: Cs-137 [redacted]

Is the As Found Efficiency Within 20% of the efficiency from the last cal.?

Reproducibility: **Isotope:** Cs-137 251997 252163 252418 **Average:** 252193 ✔ **Are the individual counts within 10% of the average?**

[redacted]

PLATEAU AND SET POINT DATA (CPM)

High Voltage	Source Response	Background
600	220184	5713
650	243852	6394
700	252037	7133
750	261044	8096
800	279166	9842

HV	CENTER	Background	Efficiency
700 V	252269	7219	Cs-137 [redacted]

Comments: **Married as a set with:** **Model:** 2221 **Serial #:** 152189 **Bar Code #:**

Calibrated to a 20 foot cable.

✔ **Does Instrument Meet Final Acceptance Criteria?** ✔ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 5-13-09

Printed Name: Carl Hall

Entered in Computer Inventory By: _____ **Date:** 5/11/09

SAFETY AND ECOLOGY CORP.
CALIBRATION DATA SHEET

FORM 67-1
REV. 2

CUSTOMER NAME	: SAFETY AND ECOLOGY	INST. MANUFACTURER	: BICRON
PLANT NAME	: SEC LAB	TYPE	: SCINTILLATION
ADDRESS	: 10512 LEXINGTON DRIVE	MODEL NO.	: MICROREM
	KNOXVILLE	SERIAL NO.	: **2015**
	TN		
CONTACT PERSON	: Jerry DeGroodt		

SOURCES USED

CAL. SOURCE USED : CESIUM -137 400Ci / 130mCi SERIAL NO: 9115 CAL DUE : 8/22/2009

M&TE USED

MINIPULSER SN : 314 CAL DUE: 1/25/2009 DVM SN: 82730524 CAL DUE : 2/28/2009

CALIBRATION DATA

		AS FOUND	AS LEFT	
HIGH VOLTAGE INDICATED (IN "OK" BAND)	:	X	X	X = BLACK "OK" BAND
+5 VOLT POWER SUPPLY (4.5 TO 5.5 V)	:	5.04	5.04	VOLTS
-5 VOLT POWER SUPPLY (-3.74 TO -5.06V)	:	-4.22	-4.22	VOLTS

SCALE	EXPOSURE RATE		INSTRUMENT READING		PER CENT ERROR	
	uR/HR	(MR/HR)	AS FOUND	AS LEFT	AS FOUND	AS LEFT
X0.1	5	(PULSED = TO)	5.00	5.00	0.00	0.00
	10	(PULSED = TO)	10.00	10.00	0.00	0.00
	15	(PULSED = TO)	15.00	15.00	0.00	0.00
X1	50	(PULSED = TO)	50.0	50.0	0.00	0.00
	100	(PULSED = TO)	100.0	100.0	0.00	0.00
	150	(PULSED = TO)	150.0	150.0	0.00	0.00
X10	500	(0.5)	550	500	10.00	0.00
	1000	(1.0)	1100	1000	10.00	0.00
	1500	(1.5)	1600	1450	6.67	-3.33
X100	5000	(5)	5500	5000	10.00	0.00
	10000	(10)	11000	10000	10.00	0.00
	15000	(15)	16500	15000	10.00	0.00
X1000	50000	(50)	50000	50000	0.00	0.00
	100000	(100)	100000	100000	0.00	0.00
	150000	(150)	152000	152000	1.33	1.33

PRECISION

SCALE	EXPOSURE RATE		AS FOUND	MEAN VALUE	% DEV.
X1000	100000	(100)	100000		0.00
			100000	100000	0.00
			100000		0.00

COMMENTS/REMARKS:

DOSE RATE CALIBRATION DONE WITH N.I.S.T. TRACEABLE SOURCES AND CALIBRATED TEST EQUIPMENT.
PULSE RATE CALIBRATION DONE AS REQUIRED DUE TO BACKGROUND RADIATION AND CORRELATED TO DOSE RATE CALIBRATION ON HIGHER SCALES.
CALIBRATION POINTS ACCEPTANCE CRITERIA +/-10% OF ACTUAL EXPOSURE RATE.
OUT OF TOLERANCE VALUES ARE CIRCLED AND CUSTOMER CONTACT NOTIFIED VERBALLY OF CONDITION.
CALIBRATION PERFORMED PER ICAL PROCEDURE NUMBER 67.

CALIBRATED BY : _____ REVIEWED BY : _____

DATE CALIBRATED : 11.17.2008 DATE REVIEWED : 11/17/08

CALIBRATION DUE DATE : 11.17.2009

SEC INSTRUMENTATION SERVICES

10512 Lexington Drive
Suite 200
Knoxville, TN 37932

SEC Corporate
2800 Solway Road
Knoxville, TN 37931

3030 Calibration Form

Meter / Probe serial number : 247862 **Customer Name :** SEC

Previous due date : **P.O Number :** 99999

Date : 4/22/2009 **Technician :** Thomas Thompson

Reason For Calibration : Due

Instrument(s) used during calibration

Instrument model number - 500-2	Serial Number:	190580	Due Date:	7/23/2009
Instrument model number -	Serial Number:		Due Date:	

NIST Traceable Source(s) used :

		Source S/N	Activity(s) 2Pi (cpm)	4Pi (dpm)	Assay Date(s)
1>	Pu-239	4079-02	14,600	28,700	1/10/2008
2>	Th-230	4071-02	20,600	40,600	1/10/2008
3>	Tc-99	4072-02	17,300	27,700	1/10/2008
4>	SrY-90	4076-02	9,300	13,300	1/10/2008

As Found Instrument Condition **Unsat** As Left Instrument Condition **SAT**

METER

	Target	As Found	%Error	As Left	%Error
Beta Threshold	4mV	4.2	5.00%	4	0.00%
Beta Window	50mV	52	4.00%	50	0.00%
Alpha Threshold	175mV	156	10.86%	175	0.00%
Channel Count with Pulser @10K					
Alpha	10,000	10,000	0.00%	10,000	0.00%
Beta	10,000	10,000	0.00%	10,000	0.00%
Power Supply Calibration					
	1000V	1106V		1000V	
Maximum HV (1500V +)		Sat		Sat	

Digital Scaler

Target	As Found	%Error	As Left	%Error
250	250	0.00%	250	0.00%
2,500	2,499	0.04%	2,499	0.04%
25,000	24,989	0.04%	24,989	0.04%
250,000	249,892	0.04%	249,892	0.04%

PROBE

Previous efficiencies

As Found HV _____ Pu-239 _____ Tc-99 _____ As Left HV 600V Alpha: 175mV

As Found in CPM Th-230 Sry-90 **As Left in CPM** Beta: 4-50mV

	Alpha	Beta
Background		
Pu-239		
Tc-99		
Th-230		
SrY-90		

A-B Xtalk: #DIV/0!
B-A Xtalk: #DIV/0!

	Alpha	Beta
Background	0	39
Pu-239	10406	280
Tc-99	0	8001
Th-230	13819	
SrY-90		5298

A-B Xtalk: 2.32%
B-A Xtalk: 0.00%

	Pu-239	Tc-99	Th-230	SrY-90
Efficiencies	0.00%	0.00%	0.00%	0.00%

	Pu-239	Tc-99	Th-230	SrY-90
Efficiencies	36.26%	28.74%	34.04%	39.54%

Beta Source: SrY90 Activity: 13,300 **Plateau Data** Alpha Source: Pu239 Activity: 28,700

High Voltage	BG Alpha	BG Beta	SrY90 Alpha	SrY90 Beta	Net Efficiency	Pu239 Alpha	Pu239 Beta	Net Efficiency	Net A to B Xtalk	Net B to A Xtalk
500V	0	22	4890	58	0.27%	9153	250	31.89%	2.49%	13583.33%
550V	0	41	5638	59	0.14%	10083	268	35.13%	2.25%	31322.22%
600V	0	45	5325	83	0.29%	10412	271	36.28%	2.17%	14013.16%
650V	2	82	4176	176	0.71%	10312	391	35.92%	3.00%	4440.43%
700V	1	193	2809	677	3.64%	10390	910	36.20%	6.90%	580.17%

Reproducability (SrY90)		Average		
1>	5375	5389.33333	OK	Does instrument meet final acceptance criteria?
2>	5384		OK	Is the as found data within 20% of the set point?
3>	5409		OK	Calibration sticker attached?
			OK	Reproducibility : Are the individual counts within 10% of the average?

Comments : Probe and meter are a single unit. Calibrated per SEC-IS-406 and SEC-IS-414.
Replaced mylar.
Initial calibration.

Performed by : [signature] Date unit is due for next calibration **4/22/2010**

Printed Name : Thomas Thompson Reviewed by : [signature] Date : 4/23/09

Entered into computer inventory by: [signature] Date : 4.22.09

Safety and Ecology Corporation

SEC PROCEDURE # SEC-IS-409

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

Calibration Certificate for LV-1,Serial # 002100, Bar Code # ,Property # SEC-5031

Date: 05/13/09 **Date Last Cal. Expires:** 07/30/09 **Technician:** Thomas Thompson

Location: 9999, **Reason For Calibration:** Due and Repair

EQUIPMENT USED DURING CALIBRATION

MODEL: D-812 V.2 **SERIAL #:** 3531 **CAL. DUE:** 07/29/09

MODEL: **SERIAL #:** **CAL DUE:**

AS FOUND DATA **AF Physical Condition** SAT **AS LEFT DATA**

As Found Instrument Flow Indication: 60 LPM **As Left Instrument Flow Indication:** 40 LPM

As Found Calibrator Flow Indication: 58 LPM **As Left Calibrator Flow Indication:** 40 LPM

Unit of Measure: (•) LPM ( ) CFM

Reproducibility 40 LPM 40 LPM 40 LPM **Average:** 40.00 LPM

☑ **Are the Individual Counts Within 10% of the Average?**

CALIBRATION DATA	TARGET VALUE	AIR SAMPLER READING	CALIBRATOR READING	ERROR %
	20.00 LPM	20.00 LPM	20.00 LPM	0.00% LPM
	40.00 LPM	40.00 LPM	40.00 LPM	0.00% LPM
	80.00 LPM	80.00 LPM	80.00 LPM	0.00% LPM

Air Sampler Setting 40.00 ☑ **Is Error Within 10%?**

Reproducibility 40 LPM 40 LPM 40 LPM **Average:** 40.00 LPM

☑ **Are the Individual Counts Within 10% of the Average?**

Air Sampler rotometer reading: ( ) Use Manufacturers Indication (•) Use Corrected Marking ( ) N/A

Comments: **Married as a set with:** **Model:**

Replaced quick connector female. Replaced power cord. Replaced vacuum gauge.

☑ **Does Instrument Meet Final Acceptance Criteria?** ☑ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: 05/13/10

Performed by: _____ **Reviewed by:** _____ **Date:** 5/13/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: _____ **Date:** 5·13·09

Safety and Ecology Corporation

SEC PROCEDURE # SEC-IS-409

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

Calibration Certificate for LV-1,Serial # 003519, Bar Code # ,Property # SEC-6716

Date: 05/13/09 **Date Last Cal. Expires:** 11/04/09 **Technician:** Thomas Thompson

Location: 9999, **Reason For Calibration:** Due and Repair

EQUIPMENT USED DURING CALIBRATION

MODEL: D-812 V.2 **SERIAL #:** 3531 **CAL. DUE:** 07/29/09

MODEL: **SERIAL #:** **CAL DUE:**

AS FOUND DATA **AF Physical Condition** SAT **AS LEFT DATA**

As Found Instrument Flow Indication: 70 LPM **As Left Instrument Flow Indication:** 40 LPM

As Found Calibrator Flow Indication: 70 LPM **As Left Calibrator Flow Indication:** 40 LPM

Unit of Measure: (•) LPM ( ) CFM

Reproducibility 40 LPM 40 LPM 40 LPM **Average:** 40.00 LPM

☑ **Are the Individual Counts Within 10% of the Average?**

CALIBRATION DATA	TARGET VALUE	AIR SAMPLER READING	CALIBRATOR READING	ERROR %
	20.00 LPM	20.00 LPM	20.00 LPM	0.00% LPM
	40.00 LPM	40.00 LPM	40.00 LPM	0.00% LPM
	80.00 LPM	80.00 LPM	80.00 LPM	0.00% LPM

Air Sampler Setting 40.00 ☑ **Is Error Within 10%?**

Reproducibility 40 LPM 40 LPM 40 LPM **Average:** 40.00 LPM

☑ **Are the Individual Counts Within 10% of the Average?**

Air Sampler rotometer reading: ( ) Use Manufacturers Indication (•) Use Corrected Marking ( ) N/A

Comments: **Married as a set with:** **Model:**

Replaced vascuum gauge.

☑ **Does Instrument Meet Final Acceptance Criteria?** ☑ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: 05/13/10

Performed by: _____ **Reviewed by:** _____ **Date:** 5/13/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: _____ **Date:** 5-13-09

Safety and Ecology Corporation

SEC PROCEDURE # SEC-IS-409

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

Calibration Certificate for LV-1,Serial # 002583, Bar Code # ,Property # SEC-6095

Date: 03/24/09 **Date Last Cal. Expires:** 04/02/09 **Technician:** Jeffrey Knight

Location: 9999, **Reason For Calibration:** Due and Repair

EQUIPMENT USED DURING CALIBRATION

MODEL: D-812 V.2 **SERIAL #:** 3531 **CAL. DUE:** 7/29/09

MODEL: **SERIAL #:** **CAL DUE:**

AS FOUND DATA **AF Physical Condition** UNSAT **AS LEFT DATA**

As Found Instrument Flow Indication: **LPM** **As Left Instrument Flow Indication:** 60 **LPM**

As Found Calibrator Flow Indication: **LPM** **As Left Calibrator Flow Indication:** 60 **LPM**

Unit of Measure: • **LPM** **CFM**

Reproducibility 60 **LPM** 60 **LPM** 60 **LPM** **Average:** 60.00 **LPM**

✔ **Are the Individual Counts Within 10% of the Average?**

CALIBRATION DATA	TARGET VALUE	AIR SAMPLER READING	CALIBRATOR READING	ERROR %
	20.00 LPM	20.00 LPM	20.00 LPM	0.00% LPM
	40.00 LPM	40.00 LPM	40.00 LPM	0.00% LPM
	70.00 LPM	70.00 LPM	70.00 LPM	0.00% LPM

Air Sampler Setting 60.00 ✔ **Is Error Within 10%?**

Reproducibility 60 **LPM** 60 **LPM** 60 **LPM** **Average:** 60.00 **LPM**

✔ **Are the Individual Counts Within 10% of the Average?**

Air Sampler rotometer reading: Use Manufacturers Indication • Use Corrected Marking N/A

Comments: **Married as a set with:** **Model:**

AF: Missing Quick Disconnect - Replaced. Calibrated using F&J FP-47M filter.

☑ **Does Instrument Meet Final Acceptance Criteria?** ✔ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: [redacted]

Performed by: _____ **Reviewed by:** _____ **Date:** 3/25/09

Printed Name: Jeffrey Knight

Entered in Computer Inventory By: _____ **Date:** 3-24-09

Safety and Ecology Corporation

SEC PROCEDURE # SEC-IS-409

2800 Solway Road
Knoxville, TN 37931

Calibration Certificate

Calibration Certificate for LV-1,Serial # 002608, Bar Code # ,Property # SEC-5100

Date: 05/13/09 **Date Last Cal. Expires:** 08/27/09 **Technician:** Thomas Thompson

Location: 9999, **Reason For Calibration:** Repair

EQUIPMENT USED DURING CALIBRATION

MODEL: D-812 V.2 **SERIAL #:** 3531 **CAL. DUE:** 07/29/09

MODEL: **SERIAL #:** **CAL DUE:**

AS FOUND DATA **AF Physical Condition** SAT **AS LEFT DATA**

As Found Instrument Flow Indication: 70 **LPM** **As Left Instrument Flow Indication:** 40 **LPM**

As Found Calibrator Flow Indication: 70 **LPM** **As Left Calibrator Flow Indication:** 40 **LPM**

Unit of Measure: ◉ **LPM** ○ **CFM**

Reproducibility 40 **LPM** 40 **LPM** 40 **LPM** **Average:** 40.00 **LPM**

☑ **Are the Individual Counts Within 10% of the Average?**

CALIBRATION DATA	TARGET VALUE	AIR SAMPLER READING	CALIBRATOR READING	ERROR %
	20.00 LPM	20.00 LPM	20.00 LPM	0.00% LPM
	40.00 LPM	40.00 LPM	40.00 LPM	0.00% LPM
	80.00 LPM	80.00 LPM	80.00 LPM	0.00% LPM

Air Sampler Setting 40.00 ☑ **Is Error Within 10%?**

Reproducibility 40 **LPM** 40 **LPM** 40 **LPM** **Average:** 40.00 **LPM**

☑ **Are the Individual Counts Within 10% of the Average?**

Air Sampler rotometer reading: ○ Use Manufacturers Indication ◉ Use Corrected Marking ○ N/A

Comments: **Married as a set with:** **Model:**

Replaced switch. Replaced vacuum gauge.

☑ **Does Instrument Meet Final Acceptance Criteria?** ☑ **Calibration Sticker Attached?**

Date Instrument is Due For Next Calibration: 05/13/10

Performed by: _____ **Reviewed by:** _____ **Date:** 5/13/09

Printed Name: Thomas Thompson

Entered in Computer Inventory By: _____ **Date:** 5·13·09

Daily Survey Instrument Pre-Operational Check Forms

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.15.09	7:31	Ludlum Model 2360 234860	Ludlum Model 43-93 PR 238091	4-8-10	Yes	Th-230: 8222 Sr/Y-90: 8991	6,782 – 10,172 7,528 – 11,292	E.S
5.15.09	7:37	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 9741 Sr/Y-90: 8118	7,170 – 10,754 8,914 – 13,370	ES
5.15.09	7:40	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 7510 Sr/Y-90: 9149	6,238 – 9,358 7,319 – 10,979	ES
5.15.09	7:43	Ludlum Model 2360 170550	Ludlum Model 43-93 PR 244506	4-13-10	Yes	Th-230: 7880 Sr/Y-90: 8934	6,467 – 9,701 7,131 – 10,697	ES
5.15.09	8:05	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	222896	181,618 – 272,428	ES
5.15.09	7:39	Ludlum Model 2221 172031	Ludlum Model 44-20 PR 277111	5-11-10	Yes	268257	219,194 – 328,792	ES
5.15.09	8:10	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	285682	233,673 – 350,509	ES
5.15.09	8:13	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES
5.15.09	8:15	Ludlum Model 3030 247862	N/A	4-22-10	Yes	Th-230: 11891 Sr/Y-90: 10306	9,611 – 14,417 8,525 – 12,787	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.16.09	7:07	Ludlum Model 2360 234860	Ludlum Model 43-93 PR 238091	4-8-10	Yes	Th-230: 8106 Sr/Y-90: 9420	6,782 – 10,172 7,528 – 11,292	ES
5.16.9	7:10	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 8544 Sr/Y-90: 10027	7,170 – 10,754 8,914 – 13,370	ES
5.16.9	7:15	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 8042 Sr/Y-90: 9238	6,238 – 9,358 7,319 – 10,979	ES
5.16.09	7:17	Ludlum Model 2360 170550	Ludlum Model 43-93 PR 244506	4-13-10	Yes	Th-230: 8076 Sr/Y-90: 8814	6,467 – 9,701 7,131 – 10,697	ES
5.16.9	7:22	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	230117	181,618 – 272,428	ES
5.16.9	7:24	Ludlum Model 2221 172031	Ludlum Model 44-20 PR 277111	5-11-10	Yes	294674	219,194 – 328,792	ES
5.16.9	7:26	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	275903	233,673 – 350,509	ES
5.16.9	7:30	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES
5.16.09	7:34	Ludlum Model 3030 247862	N/A	4-22-10	Yes	Th-230: 11808 Sr/Y-90: 10673	9,611 – 14,417 8,525 – 12,787	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.17.09	6:54	Ludlum Model 2360 234860	Ludlum Model 43-93 PR 238091	4-8-10	Yes	Th-230: 8097 Sr/Y-90: 9795	6,782 – 10,172 7,528 – 11,292	ES
5.17.09	704	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 8171 Sr/Y-90: 9689	7,170 – 10,754 8,914 – 13,370	ES
5.17.09	645	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 7727 Sr/Y-90: 9159 Sr/Y-90:	6,238 – 9,358 7,319 – 10,979 7,131 – 10,697	ES
5.17.09	6:47	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	228898	181,618 – 272,428	ES
5.17.09	6:50	Ludlum Model 2221 172031	Ludlum Model 44-20 PR 277111	5-11-10	Yes	270673	219,194 – 328,792	ES
5.17.09	6:52	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	290529	233,673 – 350,509	ES
5.17.09	6:58	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES
5.17.09	7:08	Ludlum Model 3030 247862	N/A	4-22-10	Yes	Th-230: 11846 Sr/Y-90: 10471	9,611 – 14,417 8,525 – 12,787	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.18.09	5:53	Ludlum Model 2360 234860	Ludlum Model 43-93 PR 238091	4-8-10	Yes	Th-230: 8064 Sr/Y-90: 9359	6,782 – 10,172 7,528 – 11,292	ES
5.18.09	6:00	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 8145 Sr/Y-90: 9763	7,170 – 10,754 8,914 – 13,370	ES
5.18.09	6:03	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 7589 Sr/Y-90: 9471	6,238 – 9,358 7,319 – 10,979	ES
5.18.09	6:03	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	231270	181,618 – 272,428	ES
5.18.09	6:07	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	292544	233,673 – 350,509	ES
5.18.09	6:10	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.19.09	5:30	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 9133 Sr/Y-90: 10574	7,170 – 10,754 8,914 – 13,370	ES
5.19.09	5:35	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 7760 Sr/Y-90: 9584	6,238 – 9,358 7,319 – 10,979	ES
5.19.09	5:39	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	233528	181,618 – 272,428	ES
5.19.09	5:43	Ludlum Model 2221 172031	Ludlum Model 44-20 PR 277111	5-11-10	Yes	279325	219,194 – 328,792	ES
5.19.09	5:45	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	296832	233,673 – 350,509	ES
5.19.09	5:49	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES
5.19.09	5:53	Ludlum Model 3030 247862	N/A	4-22-10	Yes	Th-230: 11691 Sr/Y-90: 10496	9,611 – 14,417 8,525 – 12,787	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.20.09	5:30	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 8997 Sr/Y-90: 9910	7,170 – 10,754 8,914 – 13,370	ES
5.20.09	5:37	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 9764 Sr/Y-90: 9134	6,238 – 9,358 7,319 – 10,979	ES
5.20.09	5:40	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	227968	181,618 – 272,428	ES
5.20.09	5:45	Ludlum Model 2221 172031	Ludlum Model 44-20 PR 277111	5-11-10	Yes	277791	219,194 – 328,792	ES
5.20.09	5:46	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	292521	233,673 – 350,509	ES
5.20.09	6:30	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.21.09	5:30	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	Yes	Th-230: 9980 Sr/Y-90: 10259	7,170 – 10,754 8,914 – 13,370	ES
5.21.09	5:35	Ludlum Model 2360 227433	Ludlum Model 43-93 PR 244541	4-8-10	Yes	Th-230: 9230 Sr/Y-90: 9207	6,238 – 9,358 7,319 – 10,979	ES
5.21.09	5:39	Ludlum Model 2221 190170	Ludlum Model 44-20 PR 277116	5-11-10	Yes	214487	181,618 – 272,428	ES
5.21.09	5:43	Ludlum Model 2221 172031	Ludlum Model 44-20 PR 277111	5-11-10	Yes	272007	219,194 – 328,792	ES
5.21.09	5:45	Ludlum Model 2221 152189	Ludlum Model 44-20 PR 277108	5-11-10	Yes	291708	233,673 – 350,509	ES
5.21.09	5:50	Bicron MircoRem 2015	N/A	11-17-09	Yes	900 µR/hr	720 – 1,080	ES

Survey Instrument Operational Checks

Date	Time	Instrument Type and Serial Number	Probe Type and Serial Number	Cal. Due Date	Battery Check O.K.? (Yes/No)	Response Check Reading (Indicate µR/hr or cpm)	Acceptable Response Check Range	Tech. Initials
5.22.09	7:00	Ludlum Model 2360 184900	Ludlum Model 43-93 PR 2445011	4-7-10	✓ Yes	Th-230: 8795	7,170 – 10,754	ES
						Sr/Y-90: 9963	8,914 – 13,370	