RL-F-1325.6 (02/98)

0100253

**United States Government** **Department of Energy**

# memorandum

**Richland Operations Office**

DATE: NOV 16 2011

REPLY TO ATTN OF: AMRC:JHZ/12-AMRC-0028

SUBJECT: FIELD INVESTIGATION REPORT FOR THE 618-10 BURIAL GROUND INTRUSIVE SAMPLING, WCH-431 REV.0 AND 618-11 NON-INTRUSIVE CHARACTERIZATION REPORT

TO: Memorandum-to-File

Attached is a copy of the Field Investigation Report for the 618-10 Burial Ground Intrusive Sampling, WCH-431 Rev.0 and 618-11 Non-Intrusive Characterization Report.

J. H. Zeisloft, 618-10/11 Subproject Director
River Corridor Project

Attachments

cc w/attachs:
Administrative Record H6-08

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Rev. 0

River Corridor
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# Field Investigation Report for the 618-10 Burial Ground Intrusive Sampling

**February 2011**

For Limited Use Only

**Washington Closure Hanford**

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

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FEB. 14, 2011
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WCH-431
Rev. 0

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Author:
**Z. P. Walton**

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# ACRONYMS

| | |
|---|---|
| AOC | area of contamination |
| BEGe | broad energy germanium detector |
| bgs | below ground surface |
| CFR | *Code of Federal Regulations* |
| COC | contaminant of concern |
| COPC | contaminant of potential concern |
| CRATER™ | Compton Ratio Analysis Testing for Environmental Radioactivity |
| DOE | U.S. Department of Energy |
| DPF | drum penetration facility |
| GEA | gamma spectral/energy analysis |
| GI | geophysical investigation |
| GIS | Geographical Information System |
| HEPA | high-efficiency particulate air |
| IH | industrial hygiene |
| ISOCS | In Situ Object Counting System |
| MBA | material balance area |
| MDP | multi-detector probe |
| NDA | nondestructive assay |
| NIST | National Institute of Standards and Technology |
| PCB | polychlorinated biphenyl |
| PNNL | Pacific Northwest National Laboratory |
| RDR/RAWP | DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area* |
| RTR | real-time radiography |
| SNF | spent nuclear fuel |
| SSNF | suspect spent nuclear fuel |
| SVOC | semivolatile organic compound |
| TPMC | TerranearPMC |
| TRU | transuranic |
| VOC | volatile organic compound |
| VPU | vertical pipe unit |
| WCH | Washington Closure Hanford |

# METRIC CONVERSION CHART

| Into Metric Units | | | Out of Metric Units | | |
|---|---|---|---|---|---|
| *If You Know* | *Multiply By* | *To Get* | *If You Know* | *Multiply By* | *To Get* |
| **Length** | | | **Length** | | |
| inches | 25.4 | millimeters | millimeters | 0.039 | inches |
| inches | 2.54 | centimeters | centimeters | 0.394 | inches |
| feet | 0.305 | meters | meters | 3.281 | feet |
| yards | 0.914 | meters | meters | 1.094 | yards |
| miles | 1.609 | kilometers | kilometers | 0.621 | miles |
| **Area** | | | **Area** | | |
| sq. inches | 6.452 | sq. centimeters | sq. centimeters | 0.155 | sq. inches |
| sq. feet | 0.093 | sq. meters | sq. meters | 10.76 | sq. feet |
| sq. yards | 0.836 | sq. meters | sq. meters | 1.196 | sq. yards |
| sq. miles | 2.6 | sq. kilometers | sq. kilometers | 0.4 | sq. miles |
| acres | 0.405 | hectares | hectares | 2.47 | acres |
| **Mass (weight)** | | | **Mass (weight)** | | |
| ounces | 28.35 | grams | grams | 0.035 | ounces |
| pounds | 0.454 | kilograms | kilograms | 2.205 | pounds |
| ton | 0.907 | metric ton | metric ton | 1.102 | ton |
| **Volume** | | | **Volume** | | |
| teaspoons | 5 | milliliters | milliliters | 0.033 | fluid ounces |
| tablespoons | 15 | milliliters | liters | 2.1 | pints |
| fluid ounces | 30 | milliliters | liters | 1.057 | quarts |
| cups | 0.24 | liters | liters | 0.264 | gallons |
| pints | 0.47 | liters | cubic meters | 35.315 | cubic feet |
| quarts | 0.95 | liters | cubic meters | 1.308 | cubic yards |
| gallons | 3.8 | liters | | | |
| cubic feet | 0.028 | cubic meters | | | |
| cubic yards | 0.765 | cubic meters | | | |
| **Temperature** | | | **Temperature** | | |
| Fahrenheit | subtract 32, then multiply by 5/9 | Celsius | Celsius | multiply by 9/5, then add 32 | Fahrenheit |
| **Radioactivity** | | | **Radioactivity** | | |
| picocuries | 37 | millibecquerel | millibecquerels | 0.027 | picocuries |

# 1.0 INTRODUCTION

This field investigation report presents the methodology, approach, and results from intrusive field operations and data collection activities performed at the 618-10 Burial Ground to support future remedial actions at the site. Intrusive characterization field activities were conducted from August 4, 2010 through August 28, 2010. The primary activities included the excavation of 5 test pits across a subset of the 12 burial trenches located in the 618-10 Burial Ground and sampling of materials during the excavation activities. The purpose of intrusive field operations was to:

- Provide data to correlate with and supplement the following:
  - Nonintrusive cone penetrometer data
  - Nonintrusive geophysical data
- Demonstrate methodologies for remediation and material handling
- Obtain physical, chemical, and radiological information for trench remediation planning
- Identify and incorporate lessons learned from previous investigations and open excavation remediation operations in forward work planning.

During the intrusive field operations, the five test pits were excavated through burial trenches 618-10-1, 618-10-2, 618-10-8, 618-10-13, and 618-10-20 (see Section 6.0). Several anomalies were uncovered during the excavation process including drums containing depleted uranium, an oil-filled drum, concreted drums, various laboratory bottles and debris, metal debris, a shielded cask, and metal pipes. Six soil samples were collected from each trench for the purpose of determining the chemical and radionuclide concentrations in the trench soil matrix. The results of the characterization are provided in Section 8.0.

Several methodologies were tested that are expected to be used during the full remediation. Many of these methodologies are currently used in other field remediation projects. Among these include the use of the Compton Ratio Analysis Testing for Environmental Radioactivity (CRATER™) system to sort through soil and debris with the purpose of detecting high-dose items and spent nuclear fuel, the use of dust suppressants to prevent suspension of airborne particles during trench excavation activities, the use of remote monitoring equipment on the excavators, modifications and upgrades to the drum penetration facility designed to detect and prevent the spread of alpha contamination outside the radiological control boundaries, and the use of nondestructive assay (NDA) equipment in the form of a neutron detection system to enhance the detection of alpha-emitting radionuclides.

## 1.1 BACKGROUND

The 618-10 Burial Ground is located in the 600 Area of the Hanford Site in southeastern Washington State. The 618-10 Burial Ground, also known as 300 North, 300 North Burial Ground, or the 318-10 waste site, is located about 7 km (4.4 mi) northwest of the 300 Area, west of Route 4 South. It is inside a chain-link fence and is posted with signs warning of underground radioactive material. Figure 1 shows the location of the 618-10 Burial Ground on the Hanford Site, and Figure 2 shows an aerial photograph of the site.

**Figure 1. Location of the 618-10 Burial Ground.**

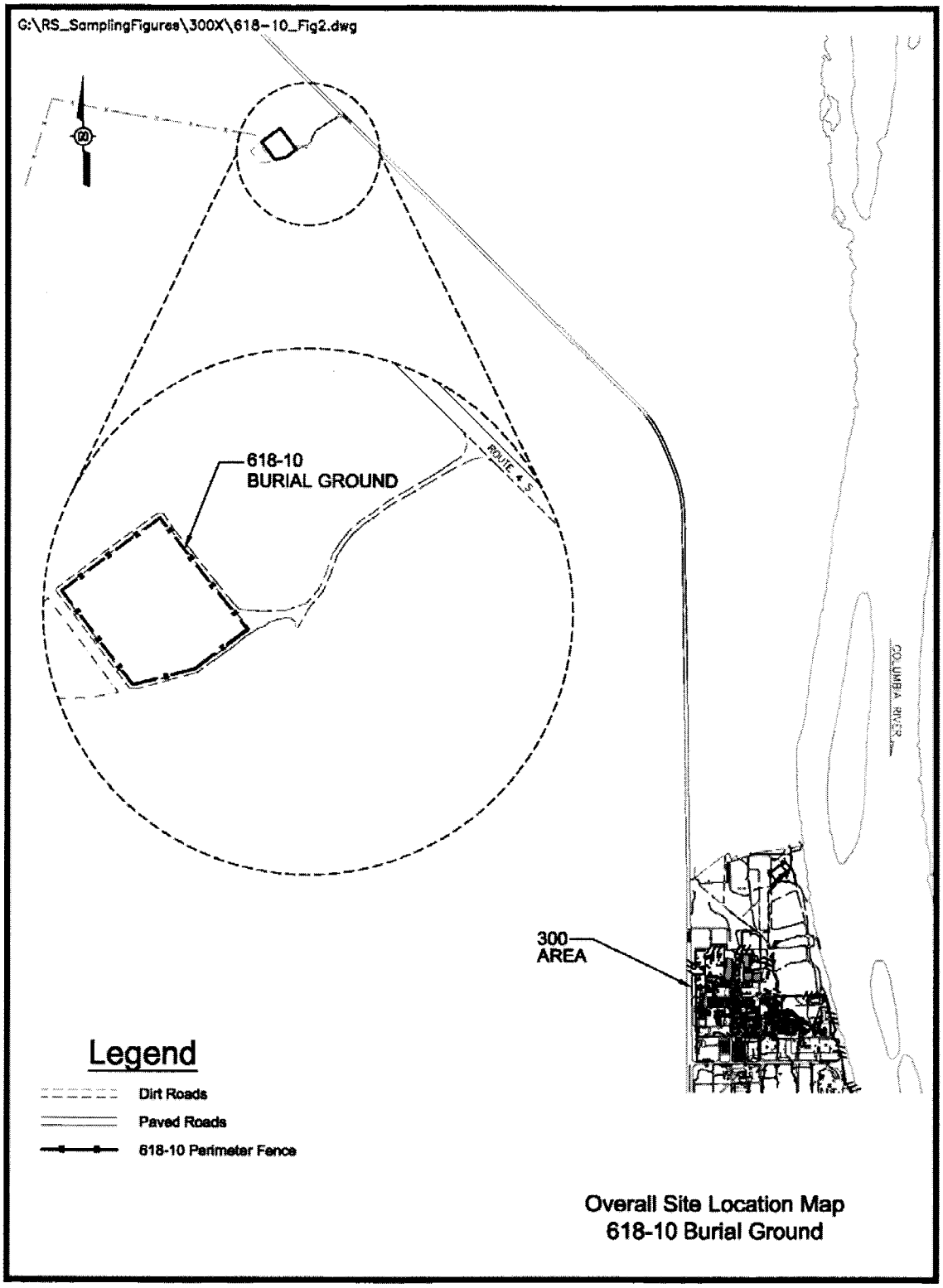
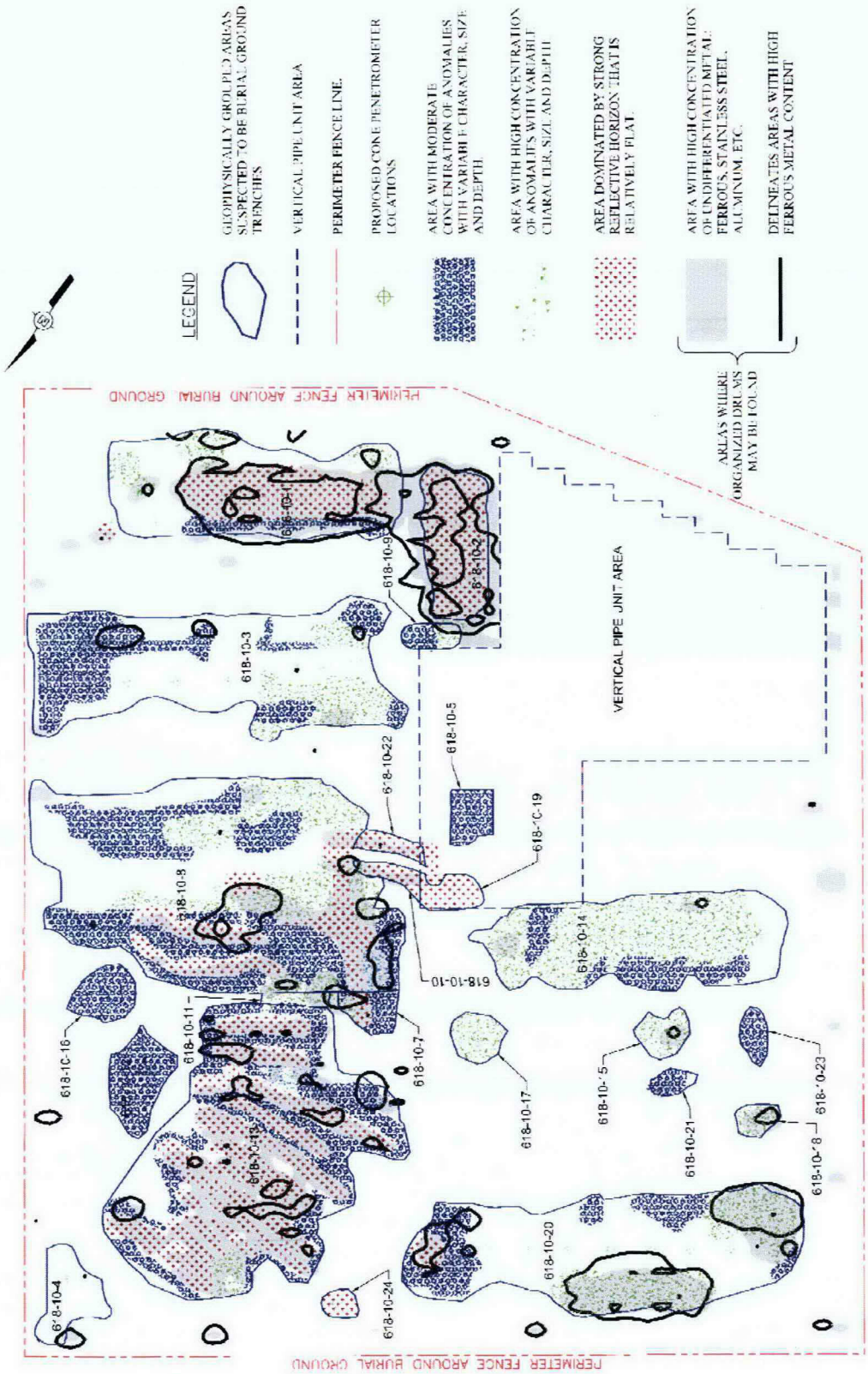


**Figure 2. Aerial Photograph of the 618-10 Burial Ground During Intrusive Characterization Site Construction (May 2010).**

During the years that the 618-10 Burial Ground was active, it received low- to high-activity radioactive waste from the 300 Area laboratories and fuels development facilities. The low-activity wastes were primarily disposed in trenches, while the moderate- and high-activity wastes were disposed in vertical pipe units (VPUs) and caissons. Some of the moderate- to high-activity wastes were also disposed to trenches in concrete/lead-shielded drums. However, the 618-10 disposal records did not include an inventory of waste content. Some of the waste that was disposed in the trenches would likely be designated transuranic (TRU) waste by current criteria.

The 618-10 Burial Ground As-Built Drawing H-3-9982 suggests the site consists of 12 trenches ranging in size from 15.2 m (50 ft) long by 12 m (40 ft) wide to 101 m (330 ft) long by 22 m (73 ft) wide. It should be noted that the burial ground as-built drawing was not prepared until after the site was closed in late 1963. For this reason, the drawing accuracy is suspect. The 618-10 Burial Ground trenches were likely to have been constructed with a 1:1 side slope, which was typical during this era. Specific burial locations have been identified in the 12 trenches with the use of geophysical techniques, and these 23 locations are shown in Figure 3.

**Figure 3. Map of the 618-10 Burial Ground Geophysical Analyses.**



The 618-10 Burial Ground was operated from March 1954 until September 1963. The burial ground surface was stabilized with 0.6 m (2 ft) of clean backfill material in 1983. Only limited records were kept of the 618-10 Burial Ground trench disposal practices. The examination of available records indicates that the burial ground was used to dispose of the following:

- Cardboard boxes of low-level waste and miscellaneous laboratory debris including bottles, boxes, filters, aluminum cuttings, and laboratory furniture
- Irradiated graphite and aluminum (3.5 R/hr) and spent fuel fragments in small "juice" cans
- Radiologically contaminated equipment and laboratory instruments (including three gloveboxes from 3706 and 222-T [1954] and a plutonium-contaminated glovebox [1960])
- Various drum types including the following:
  - Depleted uranium in oil
  - High-level liquid waste sealed in 800 to 1,000 concrete/lead-shielded drums
  - One "cut-off" box in concreted 208-L (55-gal) drum
  - Thorium waste from the U.S. Bureau of Mines
- Various chemical wastes including asbestos, mercury and mercury salts, polychlorinated biphenyls (PCBs), reactive metals (e.g., NaK and Na), cyanide, strong acids and bases, strong oxidizing and reducing agents, and organic liquids
- Electrical equipment including lighting fixtures.

Waste container exteriors were surveyed before they were transported to the 618-10 Burial Ground trenches. The actual contents of the containers are uncertain, but the radiological survey records indicate the number of waste shipments and the types of containers used. From about the mid-1950s to about 1960, the 618-10 trenches generally received low-level waste in cardboard boxes. Around 1960, the radioactivity of the waste from the 325 and 327 laboratory hot cells increased due to the examination of fuel rod and tank waste samples. Materials with higher radioactivity were packaged in concrete/lead-shielded drums.

The 618-10 Burial Ground trenches had two significant unplanned releases during operations. The first release occurred in 1961 and was caused by a fire in a trench. The fire destroyed all flammable material in the affected trench, including approximately 200 boxes of contaminated material and several high-efficiency particulate air (HEPA) filters for a cooling water system. Contamination was spread to a distance of 15 to 21 m (50 to 70 ft) outside the fenced area. The trench was covered with dirt after the fire was extinguished.

The second incident occurred while earth-moving equipment was placing stabilization soil over a trench area in 1983. When the equipment drove over this area, what appeared to be oil came to the surface. The approximately 9.3 $m^2$ (100 $ft^2$) of oil was found to be contaminated at levels up to 10,000 counts per minute. After the first release the ground was washed down using fire trucks. After the second release gravel was spread over the affected area to prevent the spread of contamination.

# 2.0 PREVIOUS INVESTIGATION

Previous investigations associated with the 618-10 Burial Ground include the geophysical analysis of the burial ground to define the location of the trenches and identify locations where drums might be located within the trenches (BHI-00291, *Geophysical Investigations of the 618-10 and 618-11 Burial Grounds, 300-FF-2 Operable Unit*, and Geophysical Investigation [GI] 0602202), the nonintrusive characterization study, and historical analyses used to determine the potential chemical hazards and identification of the contaminants of potential concern (COPCs) (IHE-2009-0006, Integrated Chemical and Radiological Hazard Evaluation Worksheet – 618-10 Burial Ground/North Burial Ground).

## 2.1 GEOPHYSICAL INVESTIGATION

Ground-penetrating radar and electromagnetic induction techniques were used to collect data at the 618-10 Burial Ground trenches (BHI-00291), and a high-sensitivity metal detector and a magnetic field instrument were later used to collect detailed total field and vertical gradient measurements data (GI 0602202). These data are inconclusive regarding the number and size of trenches, but document 20 anomalous areas suspected to be trench waste disposal sites. Some of these sites are interpreted to contain high metal content and were suspected to contain organized drums. The results from the geophysical studies are provided in the map shown in Figure 3, and geophysical descriptions of the five burial trenches where test pitting occurred during intrusive field operations are provided below.

**618-10-1:** The reflective area is highly metallic, consisting of ferrous material, which is suspected of being stacked drums. The burial trench is 15.2 by 55 m (50 by 180 ft) with the highly metallic portion measuring about 9 by 40 m (30 by 130 ft). The approximate depths of the anomalies are 1.5 to 0.9 m (5 to 3 ft).

**618-10-2:** The burial trench dimensions are approximately 11 by 55 m (35 by 180 ft) with approximate depths of anomalies appearing at approximately 1.5 m (5 ft) below ground surface (bgs). Geophysical surveys show the contents of the trench to be highly metallic, including ferrous material. A well-defined or organized boundary with a relatively flat top indicates the potential for stacked drums.

**618-10-8:** The burial trench consists of two interpreted separate areas: a 15.2- by 58-m (50- by 190-ft) trench in the southern half and a group of anomalous features approximately 3 by 30 m (10 by 100 ft) in the northern half within a single trench related to the anomalies in 618-10-13. The approximate depths of the anomalies are 3 m (10 ft) bgs in the southern portion and 0.6 to 0.9 m (2 to 3 ft) in the northern portion. In the southern half, the apparent greater burial depth (approximately 3 m [10 ft] bgs) reduces the reliability of the geophysical interpretation. The northern portion appears flat-topped, organized, and highly metallic with variable ferrous content.

**618-10-13:** The burial trench is irregularly shaped with approximate dimensions of 55 by 55 m (180 by 180 ft). This area has a character unlike any other 600 series burial ground characterized to date along the river corridor. Individual anomalous features are quasi-linear, 1.5 to 3 m (5 to 10 ft) wide, flat-topped, and variable in length, but on the order of 30 m (100 ft) long. It is not clear if the individual linear anomalies are a single feature or closely spaced

smaller individual features. The anomalies are highly metallic, but the ferrous content is variable.

**618-10-20:** The burial trench is approximately 24 by 73 m (80 by 240 ft) with general depth of anomalies at approximately 1.5 to 2.4 m (5 to 8 ft) bgs. Three zones of concentrated debris appear present in the trench. Each zone is expected to contain significant metal, including ferrous material.

## 2.2 NONINTRUSIVE CHARACTERIZATION

The nonintrusive characterization of the 618-10 Burial Ground was conducted prior to the intrusive characterization activities. A direct push rig was used with multi-detector probe (MDP) assembly to determine in situ analysis of radionuclides within the geophysical anomalies in the burial ground. The purpose of the nonintrusive characterization (DOE/RL-2008-27, *Sampling and Analysis Plan for 618-10 and 618-11 Nonintrusive Sampling*) was to map the radionuclide content along selected transects where the burial ground trenches are believed to be located. The transects avoided areas suspected to contain organized drums.

The scope of activities carried out as part of the nonintrusive sampling included geophysical delineation, in situ radionuclide characterization using an MDP assembly, and soil sampling from below select VPUs. No soil samples are proposed for the trenches during the nonintrusive sampling. The term "nonintrusive" is meant to indicate that the VPUs and trenches were not be opened or exposed in a manner in which the contents of these features would be accessible to personnel or the surface environment. The data and information collected will be used to develop decision logic to evaluate strategies for the intrusive sampling and, potentially, the remediation activities.

## 2.3 CONTAMINANTS OF CONCERN AND PHYSICAL PROPERTIES

Table 1 lists the contaminants of concern (COCs) for the 618-10 Burial Ground trench characterization effort. Initially, a list of COPCs was developed using historical documents and records for the sites, including IHE-2009-0006. The list of COPCs was further reduced to COCs using a set of exclusion criteria outlined in DOE/RL-2009-64, *Sampling and Analysis Plan for Intrusive Characterization of 618-10 Burial Ground Trenches.*

**Table 1. 618-10 Burial Ground Trench: Contaminants of Concern List. (2 Pages)**

| **Radiological Constituents** | |
|---|---|
| Am-241 | C-14 |
| Cs-137 | Co-60 |
| Eu-152 | Eu-154 |
| Eu-155 | H-3 |
| Pu-238 | Pu-239/240 [a] |
| Sr-90 [b] | Tc-99 |
| Th-232 | U-233/234 [a] |
| U-235 | U-238 |

| **Nonradiological Constituents – Metals** [c] | |
|---|---|
| | **Comments** |
| Aluminum | Fuel cladding component. |
| Arsenic | EPA toxic alloy component and pesticide. |
| Barium | EPA toxic shielding alloy component. Electrical component. |
| Beryllium | Alloy and reactor component. |
| Cadmium | EPA toxic metal used in lead-dipped cladding. |
| Chromium | EPA toxic reactor component. |
| Chromium (VI) | EPA toxic used in reactor cooling and in lab cleaning solutions. |
| Copper | Metal used in triple-dip process of cladding and cladding waste stream. |
| Iron | Reactor component. |
| Lead | EPA toxic metal used in lead-dipped cladding and cladding waste stream. |
| Mercury | EPA toxic laboratory uses. |
| Nickel | Reactor component. |
| Selenium | EPA toxic alloy. Electrical component. |
| Silver | EPA toxic miscellaneous laboratory uses. |
| Zinc | Reactor component. |

**Table 1. 618-10 Burial Ground Trench: Contaminants of Concern List. (2 Pages)**

| | |
|---|---|
| **Nonradiological Constituents – General Inorganics** | |
| Chloride | Nitrate |
| Phosphate | Sulfate |
| Cyanide | Sulfide |
| Asbestos | |
| **Nonradiological Constituents – Organics** | |
| Polychlorinated biphenyls (PCBs) | Paraffin hydrocarbons – TPH |
| Volatile organic compounds (VOCs) [d] | Tributyl phosphate (TBP) and other semivolatile organic compounds (SVOCs) [d] |

[a] Analytical method reports sum of the two isotopes.
[b] Analyzed as total radioactive strontium.
[c] Additional metals will be reported as specified by a comprehensive ICP metals analytical suite.
[d] VOA and SVOA are based on GC/MS methods routinely reporting a broad analytical suite including most commonly encountered industrial organics. The methods also screen for the potential presence of >60,000 additional organic compounds reported as tentatively identified compounds (TICs). The presence of significant quantities of TICs can be used to guide future analytical needs for the 618-10 Burial Ground.

COC = contaminant of concern
EPA = U.S. Environmental Protection Agency
GC/MS = gas chromatography/mass spectroscopy
ICP = inductively coupled plasma
SVOA = semivolatile organic analysis
TPH = total petroleum hydrocarbons
VOA = volatile organic analysis

# 3.0 AUTHORIZATION BASIS AND HAZARD ANALYSES

## 3.1 AUTHORIZATION BASIS

The hazard categorization for the 618-10 Burial Ground is specified in WCH-390, *Final Hazard Categorization for the 618-10 Burial Ground Intrusive Characterization*. WCH-390 provides the technical basis for the final hazard categorization for the 618-10 Burial Ground in accordance with 10 *Code of Federal Regulations* (CFR) 830, Subpart B, Safety Basis Requirements; and the U.S. Department of Energy (DOE) Standard DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*; and concludes that final hazard categorization for the 618-10 Burial Ground is below Hazard Category 3 or "Radiological" for surveillance and maintenance activities, and nonintrusive and intrusive characterization including extensive test pitting activities within the trenches. Requirements identified in WCH-390 to maintain the authorization basis for intrusive characterization are provided in Table A -1 of Appendix A.

## 3.2 HAZARD ANALYSIS

As part of the field investigation design, a hazards analysis was conducted to identify the relative risks and potential mitigative actions associated with excavation and handling of drummed waste at the 618-10 Burial Ground. The analysis was conducted by a team of individuals representing industrial safety, field operations, engineering, project management, fire protection, radiological controls, and industrial hygiene. The results of the 618-10 Burial Ground hazards evolution are presented in CCN 150527, "Report on the 618-10 Burial Ground Evaluation of Waste Hazards."

## 3.3 FIRE PROTECTION EVALUATION

The fire protection evaluation for the 618-10 Burial Ground intrusive characterization is outlined in 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*. 618-10-FPE-001 provides the formal analysis required to evaluate fire losses for "structureless" facilities at the 618-10 Burial Ground in accordance with Washington Closure Hanford (WCH) procedure SH-1, *Safety and Health*, SH-1-5.7, "Fire Protection Design/Operations Criteria." Fire protection requirements were provided for work controls (engineered barriers and administrative features) to minimize the hazards and likelihood of fire, and to protect workers, the public, and the environment. These requirements are provided in Table A -2 of Appendix A.

## 3.4 BERYLLIUM WORK PERMIT

Historical records indicate beryllium contamination wastes were disposed at the 618-10 Burial Ground (IHE-2009-006). Prior to authorizing intrusive characterization or remediation activities, beryllium work permits were established as required by the Hanford Site Chronic Beryllium Disease Prevention Program. The beryllium work permit number for intrusive characterization was 618-10-BWP-2, Rev. 1.

As part of the 618-10 Burial Ground intrusive characterization industrial hygiene exposure assessment monitoring plan (CCN 149393, "Industrial Hygiene Exposure Assessment"), daily personal and area monitoring for total dust and metals (including beryllium) was conducted during trenching work on high-exposure potential Similar Exposure Group personnel. Industrial Hygiene sampled for total dust and metals using sampling pumps and sampling cassettes.

Engineering controls utilized to prevent beryllium exposure included dust minimization techniques (i.e., use of soil fixatives such as Dust Bond®), positioning personnel upwind from excavation activities, remote operations, and work curtailment during excessive wind. Administrative controls included the use of exclusion zones, contamination reduction corridors, and beryllium work areas with appropriate barricades, hazard warnings, and notifications. Work zones were established to exclude unauthorized personnel from the excavation areas. Because the work at the 618-10 Burial Ground is ranked as a high risk, nonworkers and visitors were restricted to upwind locations outside the burial ground fence to avoid potential exposure to hazardous materials. Personnel directly involved with trenching activities (i.e., personnel inside the active exclusion zone and heavy equipment operators) were required to wear Level "B" personal protective equipment, which included full-face respiratory protection.

® Dust Bond is a registered trademark of D&D Emulsions, Inc.

Intrusive characterization excavation work was performed by qualified beryllium workers inside beryllium-controlled and regulated areas. All personnel involved were enrolled in the medical surveillance program for Hazardous Waste Workers.

# 4.0 FIELD INVESTIGATION PLAN

The field investigation plan (WCH-357, *Field Investigation Plan for the 618-10 Burial Ground Intrusive Sampling*) outlined the methodology and approach for intrusive field operations and data collection activities at the 618-10 Burial Ground to support future remedial actions at the site. The primary purpose was to excavate test pits and obtain chemical and radiological data, and demonstrate methodologies and techniques that may be utilized during the full-scale remediation of the burial ground. The characterization activities proposed for the 618-10 Burial Ground trenches included the following:

- Cross-trench or pothole select trenches based on previous geophysical studies and readings from in situ radionuclide characterization information using an MDP assembly.
- Analyze soil samples on a grid across and at depth for each cross-trench.
- Collect samples of waste material and catalog waste types, distribution, and quantity from within the trenches selected.
- Analyze samples to the extent possible using real-time field analytical techniques. Determine the presence of free liquids in waste materials. Send remaining samples to appropriate laboratories for analysis.
- Determine if geophysical studies and in situ radionuclide characterization information, coupled with information collected during intrusive characterization, are sufficient to support design solutions and remediation of 618-10 Burial Ground trenches.
- Determine if sampling methods, field analytical techniques, laboratory techniques, and soil fixatives are adequate to support remediation.

Excavation, removal, inspection, and characterization of 10 to 20 drums were desired. If possible, drums were to be excavated from different areas of the burial ground while minimizing the overall disturbed areas and number of drums excavated. General observations of the depth, orientation, layering, and condition of unearthed drums were to be recorded. Excavated drums were to be selected for characterization based on a preference to obtain information from drums with dissimilar exterior features (e.g., size, type, and markings). As part of the characterization process, excavated drums were to be screened with the use of commercial NDA and real-time radiography (RTR) services to aid with identification of TRU waste and free liquids. The NDA and RTR services could not be performed during the intrusive characterization activities because the mobile facilities used to perform these services were not available through the chosen vendor during this period. It is expected that NDA and RTR services will be performed during trench remediation, and if these services are performed the drums excavated and retained during intrusive characterization will be screened during the remediation phase. It was recognized that the degree to which the objectives could be met was

limited by project schedule constraints. Where applicable, deviations from the field investigation plan (WCH-357) will be noted in the following sections.

Health and safety precautions and contingency plans were integrated with the investigation activities with the intent of providing a guidance tool for the pre-job safety briefing and a field reference for personnel performing and supporting this task.

# 5.0 SITE PREPARATION AND LAYOUT

The intrusive characterization site design was developed based on past experience with previous burial grounds (e.g., 618-7 and 618-1 Burial Grounds), information gathered in technical literature, and input from subject matter experts. The location of the characterization trenches was based on historical information and geophysical survey results. Before beginning the intrusive characterization field activities, equipment/supplies were mobilized and the site was prepared to support the investigation.

## 5.1 PURSUIT OF AN EXPERT SUBCONTRACTOR

Early in the planning stages of the project, it was recognized that the hazards posed by the intrusive characterization of the 618-10 Burial Ground would require a significant amount of planning and preparation by WCH and subcontractor staff. It was suggested that the field investigation could be more safely and effectively implemented by procuring the services of a vender with specific experience in the excavation, characterization, stabilization, and treatment of pyrophoric metals and beryllium, and the alpha-(plutonium-) contaminated items expected to be found in the 618-10 Burial Ground. It was also preferable for the subcontractor to have had previous experience with Hanford Site burial grounds. Consequently, an experienced vendor with previous Hanford Site remediation experience was selected and a single (noncompetitive) request for proposal issued to that vendor. The chosen vendor was TerranearPMC (TPMC), which had extensive experience in performing Hanford Site remediation projects including remediation of the 618-7 Burial Ground. Primary responsibilities of TPMC consisted of (1) construction of the 618-10 Burial Ground infrastructure associated with characterization activities, and (2) intrusive characterization (test pitting) of 618-10 Burial Ground trenches. WCH and subcontract personnel performed sampling, sample management, and radiation control monitoring.

## 5.2 SITE PREPARATION

Necessary items included appropriate heavy equipment to conduct excavation activities, weigh drums, lift drums into overpacks, pierce drums to access contents, and move overpacked drums between the designated work areas (e.g., inspection area and staging area). Vegetation was cleared around the site perimeter to establish a fire break, and access roads were constructed. A supply of new 208-L (55-gal) and 322-L (85-gal) open-top drums (per waste management specifications) were staged at the site to use (as needed) for overpacking excavated drums. A stockpile of sand was staged at the site as a precaution for the suppression of fires involving Zircaloy chips/fines, as needed. No fires were experienced during intrusive characterization activities. Air monitors were positioned and operating in accordance with the approved air

monitoring plan prior to initiating excavation operations (operation for a 2-week period prior to the start of work is desired to establish a baseline). A drum storage area was prepared within the area of contamination (AOC) according to the specifications outlined in the applicable fire protection documents.

## 5.3 DRUM PENETRATION FACILITY MODIFICATIONS

For use during the intrusive characterization activities and the subsequent burial ground remediation, modifications were made to the drum penetration facility (DPF) design used at the 618-7 Burial Ground in order to enhance functionality and add the capability for monitoring of alpha source radionuclide (plutonium) contamination. Initial modifications included the following:

- The punch mast was hinged and capability added to remotely lift the mast from the control trailer. Modifications were made so the punch could be presented to a fixed set of alpha-only scintillation detectors after the drum is perforated. The detectors, ratemeter, and check-sources were to be provided by WCH.

- A remote-actuated locking mechanism designed to lock the punch mast in the deployed position and in the up position was installed.

The alpha monitoring capabilities were added to the DPF, but the detectors, ratemeter, check-sources, and computer were not installed in the DPF and tested prior to the intrusive characterization activities. These instruments are to be provided by Pacific Northwest National Laboratory (PNNL), but were not made available prior to the intrusive characterization activities.

Additional modifications to enhance the DPF functionality included the following:

- A turntable was designed and installed that can be operated from the control room to reposition drums.

- The door arms were replaced with more robust pistons so that it can be closed under windy conditions.

- The camera exposure was adjusted so that it provides viewable images under more varied light conditions.

- A quick-mount was added so the video camera can be easily repositioned.

- An adjustable speed control was added for raising and lowering the lift table from the control room.

- A mechanism was designed and installed to open/cut plastic bags when visible after punching.

- The diesel-powered air compressor was replaced with a smaller stationary electric compressor.

- The infrared (temperature) sensor was replaced.

- A microphone was added so sounds can be monitored and recorded on the video recorder.
- The fire-suppression water pump flow rate was increased to a minimum of 38 L/min (10 gal/min).
- A second stationary video camera was installed.
- The punch size was increased to a 15-cm (6-in.) diameter.
- The exhaust duct between the HEPA filter and drum punch was upgraded to prevent collapse during use.

After the initial modifications were implemented, it was determined that further modifications were needed. These additional modifications included the following:

- Modification of the plastic bag cutter to remove the barbs from the back side of the arrowhead so that retraction of the cutter does no pull the materials of the drum.
- Addition of a remote switch to actuate DPF lights from the control room.
- The table lift speed was made adjustable; adjustment of speed to be determined by the variable flow control valve with smooth, consistent, and repeatable movement.
- The fire-suppression flow rates as specified in the original modifications did not meet the minimum 38 L/min (10 gal/min). The pumps were replaced to ensure the flow rate of fire-suppression water was capable of producing a minimum of 38 L/min (10 gal/min), and the water and oil nozzles were located such that fluids are delivered to the drum perforation.
- Addition of an additional platform on the front of the lift table that provides a visual edge for the tele-handler operator to see for drum placement. The platform was designed not to interfere with door or lift operation.
- Provide the ability to remotely source check the alpha sensors to ensure operations of sensors before processing drums. The added source checking devise has the ability to position the alpha source 0.6 cm (0.25 in.) from the surface of the sensor for verification and remove the source from the presence of the sensor to prevent false readings following verification.

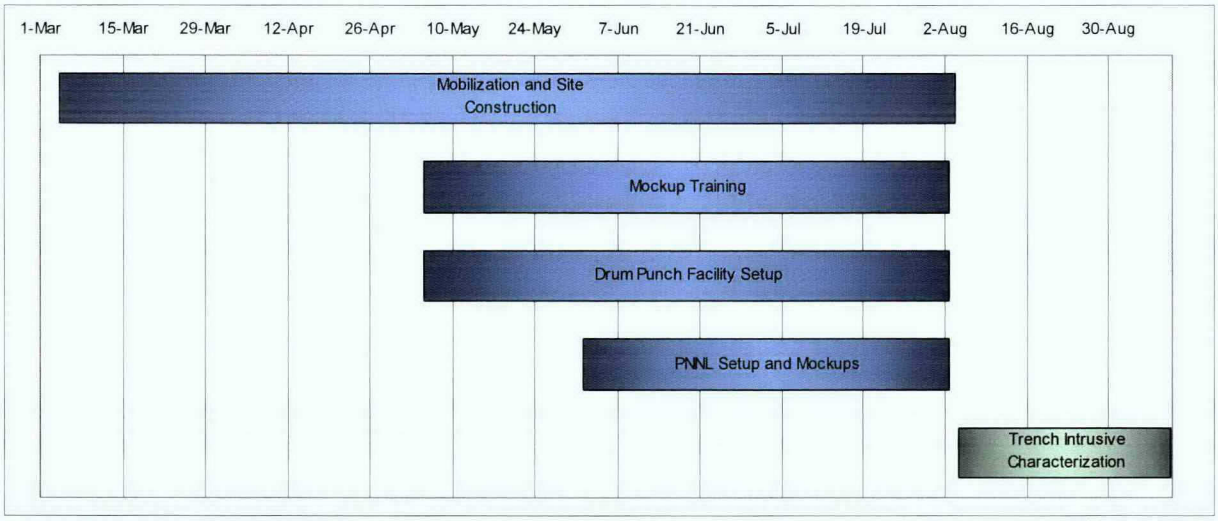
Because of the nature of drums removed from the test pits, no drums were punched and sampled using the DPF during the intrusive characterization activities.

## 5.4 MOBILIZATION AND MOCKUPS

Mobilization for the construction and intrusive characterization of the 618-10 Burial Ground began in March 2010. During the mobilization phase equipment and materials were moved on site and the basic infrastructure was developed in preparation for intrusive characterization activities. This included the construction and layout for the drum processing area, including the DPF, the AOC, and the access roads.

Following the completion of the site drum processing area and access roads, mockup and dry-run exercises were conducted with the purpose of training and accessing the readiness of the site workers to perform drum and anomaly processing, and respond to emergency conditions (e.g., drum fires). The set up and testing of the PNNL NDA equipment (see Section 7.5) was part of the mockup and dry-run exercises. Figure 4 shows the timeline events for mobilization and mockup exercised leading up to the intrusive characterization.

**Figure 4. Timeline History for Intrusive Characterization Mobilization and Mockups.**



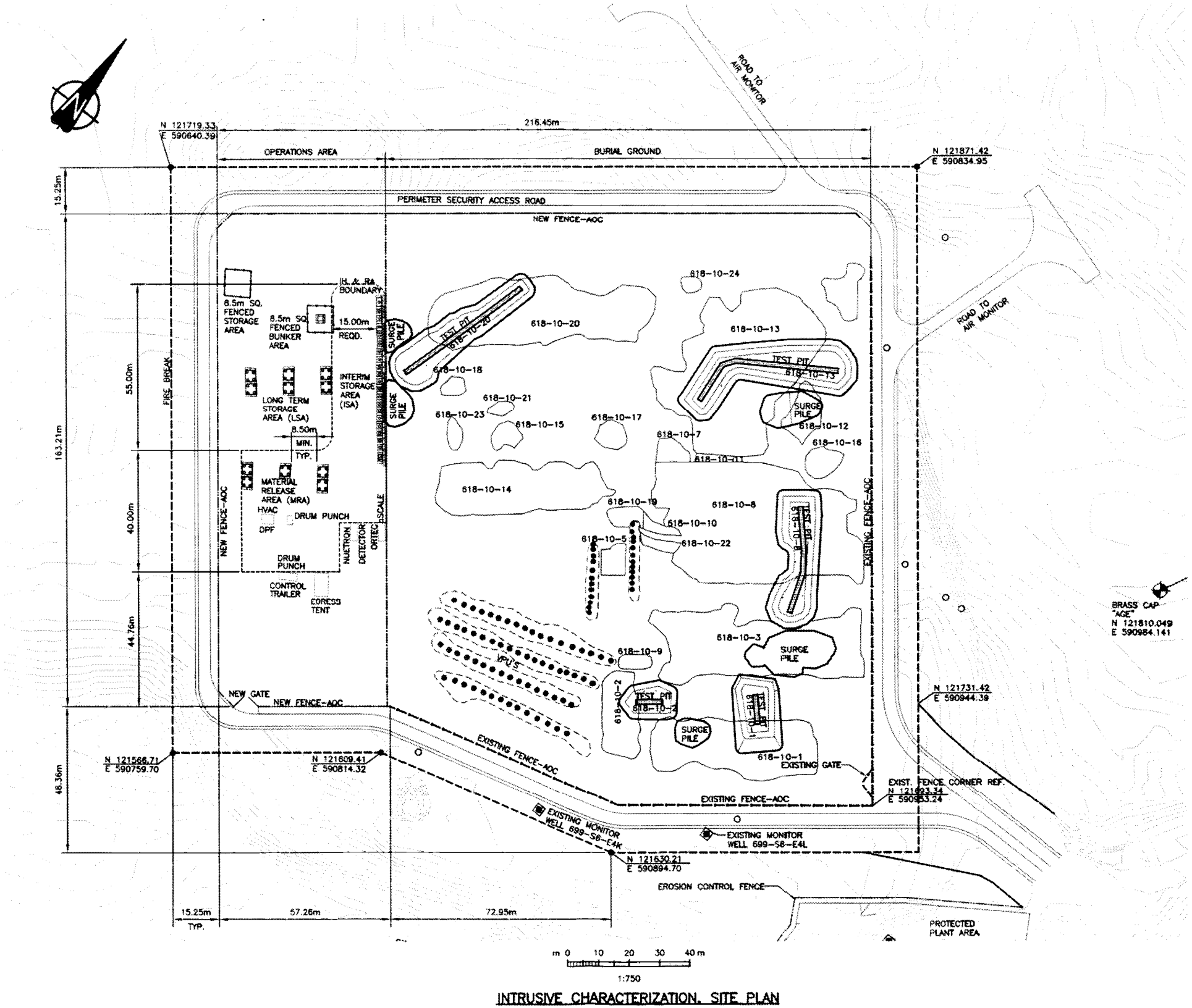

## 5.5 SITE LAYOUT

Elements of the site layout included the following:

- Establishment of an AOC
- Beryllium control area within the AOC
- Spent nuclear fuel (SNF) bunker located within a material balance area (MBA)
- Drum characterization area, including DPF
- NDA trailer located outside beryllium control area.

The intrusive characterization site layout (based on As-Built Drawing 0600X-DD-C0487) is shown in Figure 5.

**Figure 5. Drawing of the Proposed 618-10 Burial Ground Intrusive Characterization Layout (As-Built).**



# 6.0 EXPLORATORY TEST PITTING

## 6.1 EXCAVATION TECHNIQUES

At each location where intrusive activities were conducted, the subcontractor excavated soil and debris in accordance with approved means and methods that reflect the design elements and the following general earthwork objectives (to the extent practicable):

- Minimize the potential to inadvertently pierce a drum (e.g., toothless bucket)
- Minimize disturbance to surrounding drums during the excavation process
- Prevent dispersion of dust from the site during operations with the use of dust-suppression agents such as Dust Bond®.

As part of the field investigation plan, the primary excavator, equipped with an enclosed cab and blast shield, was used to excavate the test pits. The primary excavator was used for digging cross-trenches/test pits, as well as removing drums from the excavation. The primary excavator was equipped with a gamma radiation ratemeter, an infrared sensor (to detect thermal changes), and a photoionization detector, for detection of volatile organic compounds (VOCs). Radiological control technicians and industrial hygiene (IH) technicians conducted further monitoring based on the radiological work permit and IH health and safety documentation. The equipment operator had a hand-held color camera to be used in recording images for review by the project engineer or resident engineer (or other applicable staff) when an anomaly or item of interest was located during excavation. In addition, the resident engineer or designee was consulted regularly when new material types or anomalies were discovered. The resident engineer determined if the material or anomaly was to be removed from the trench, further analyzed, or sampled.

Test pit excavation began with the primary excavator excavating an initial surge pit in clean undisturbed material adjacent to the trench to be excavated. The operator then initiated trenching toward the burial ground trench. During trenching activities, Dust Bond® and water were continuously applied to the excavation area to prevent the suspension of dust. The application of dust-suppression water and fixatives was performed as part of the excavation operations at the test pitting site and on the roads and various exposed surfaces around the site. Dust-suppression water and fixatives (e.g., Dust Bond®) were applied with use of remotely controlled and/or manually controlled nozzles to prevent visible dust from being suspended or dispersed from the excavation site. Likewise, water trucks regularly applied water and appropriate dust fixatives to roads and exposed surfaces during operation hours.

In the field investigation plan, a second excavator with a CRATER™ system was used to sort small-sized material with the purpose of looking for high-dose items such as suspect spent nuclear fuel (SSNF) after the initial excavation by the primary excavator (referred to as a second sort). During the excavation of the first two trenches, it became apparent that use of the CRATER™ system was inefficient for screening the types of materials and debris discovered in the 618-10 burial trenches in bulk. The CRATER™ system was developed to detect SSNF and high-dose items in reactor component burial trenches with hot objects and soil (e.g., the reactor component trenches found in the 100 Area). It is an effective tool under these operating conditions. The reactor component trenches are different from the 618-10 Burial Ground

trenches in that there are fewer high-dose items and SSNF expected. Based on the experience with the use of the CRATER™ system at the 618-10 Burial Ground, further evaluation was needed to determine how it can be effectively applied for remediation of the 618-10 Burial Ground. The proposed alternative is that the primary excavator with the use of the gamma radiation meter is sufficient for an initial sort of the 618-10 trench materials for high-dose items and SSNF. If a high-dose item is detected, the secondary excavator with the CRATER™ system can be used to further screen the item or material for SSNF.

## 6.2 TEST PITS

The objective of the intrusive characterization test pitting activities was to provide information about the types and quantities of wastes, level of contamination, and condition. Discrete items (e.g., equipment, laboratory debris, and drums) and soil contaminated with alpha-emitting radionuclides was expected during the excavation of the test pits. The proposed test pit locations were initially determined based on the previous geophysical data and the preliminary data from the nonintrusive characterization (see Section 2.0).

Initially six text pits were planned as part of the field investigation plan. Five test pits/exploratory trenches were excavated during the intrusive characterization activities over the period of August 4 through August 27, 2010. The operational time set for performing intrusive characterization was fixed at approximately 1 month. These five test pits were excavated through the following five burial trenches (in order of excavation): 618-10-1, 618-10-8, 618-10-13, 618-10-20, and 618-10-2. The five exploratory test pits are shown in Figures 5 and 6. The locations and direction of the test pits were modified during the intrusive characterization as information from the first test pits was applied to subsequent test pits. In addition, the total number of test pits (i.e., five) was limited by findings and the amount of time spent searching for anomalous items and drums in the first few pit excavations. The directions of excavations are shown with tan arrows in Figure 6. The overall timeline showing when surge pits and test pits were excavated is shown in Figure 7. Timeline histories for the five test pits are presented in the following sections.

**Figure 6. Drawing Showing Locations of the Intrusive Characterization Test Pits.**

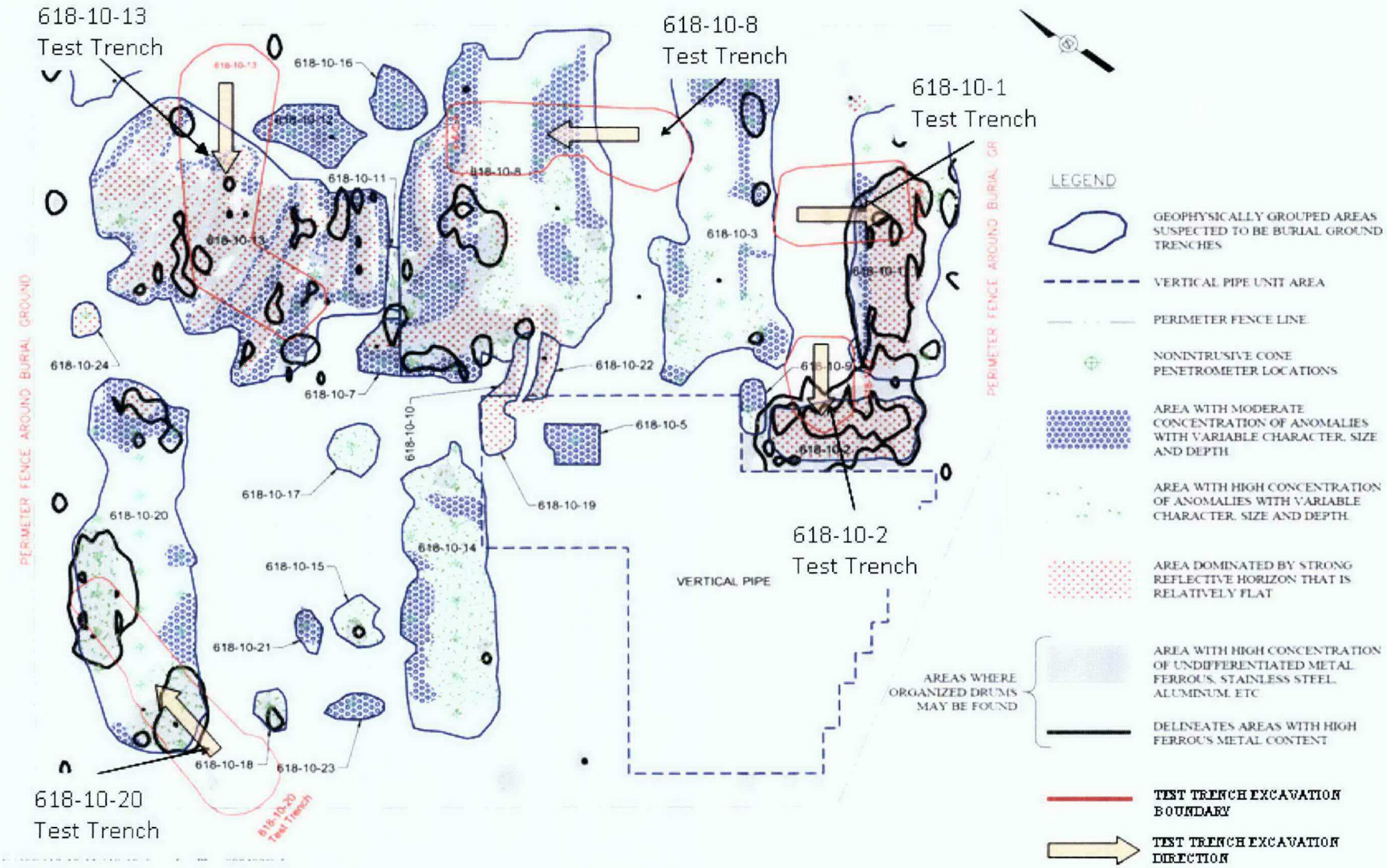
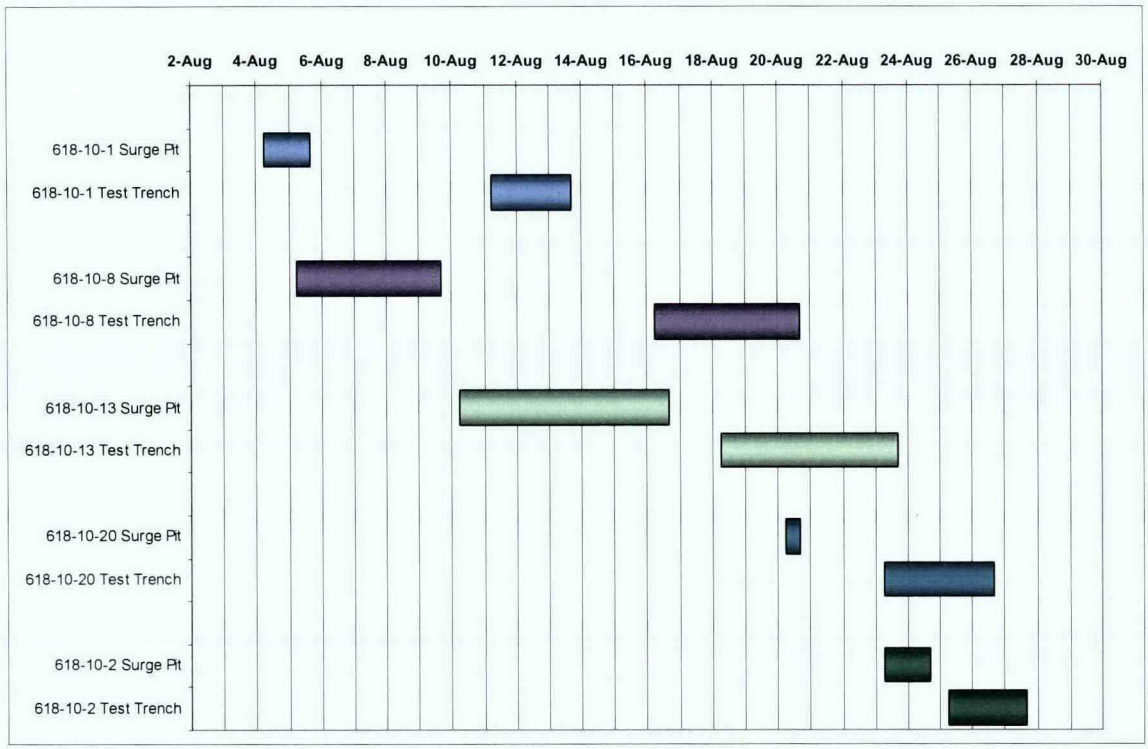


**Figure 7. Timeline History for Intrusive Characterization Test Pits.**




### 6.2.1 618-10-1 Test Pit

The timeline of events occurring during the intrusive characterization of the 618-10-1 test pit is shown in Figure 8. The surge pit was completed on August 5, 2010, and the test pit was started on August 11, 2010. Several loose (unorganized) drums at about 1.5 m (5 ft) bgs were discovered on August 12, 2010, and one 114-L (30-gal) damaged depleted uranium drum was removed and placed in a B-12 box. A soil sample from the matrix around the drum was collected and analyzed (see Section 8.0). The excavator operator noted several laboratory-type bottles near the cache of drums. Soil samples were collected on August 13, 2010.

### 6.2.2 618-10-8 Test Pit

The timeline of events occurring during the intrusive characterization of the 618-10-8 test pit is shown in Figure 9. The surge pit was completed August 9, 2010, and the test pit started on August 16, 2010. Only a few items were discovered in the trench. A stainless steel transportation cask (or "pig') was discovered on August 16, 2010, at about 4.6 m (15 ft) bgs. The cask was monitored in place then removed from the trench for NDA screening (see Section 8.0). No radiation was detected above background and the cask was returned to the trench on August 20, 2010.

**Figure 8. Timeline History for the 618-10-1 Test Pit.**

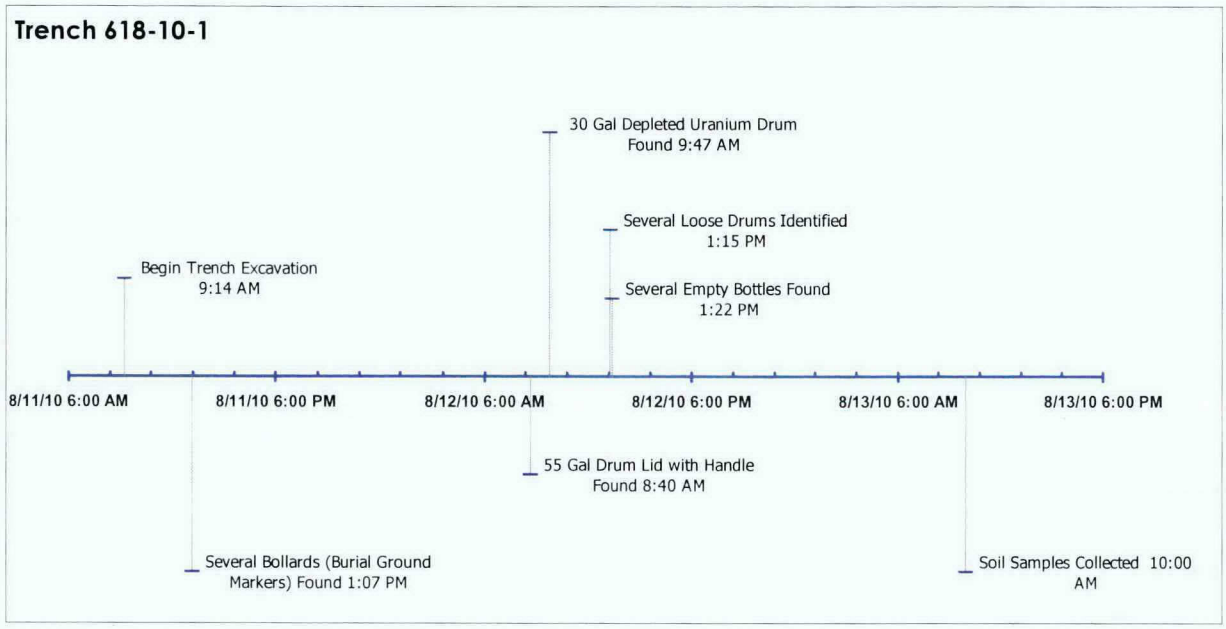
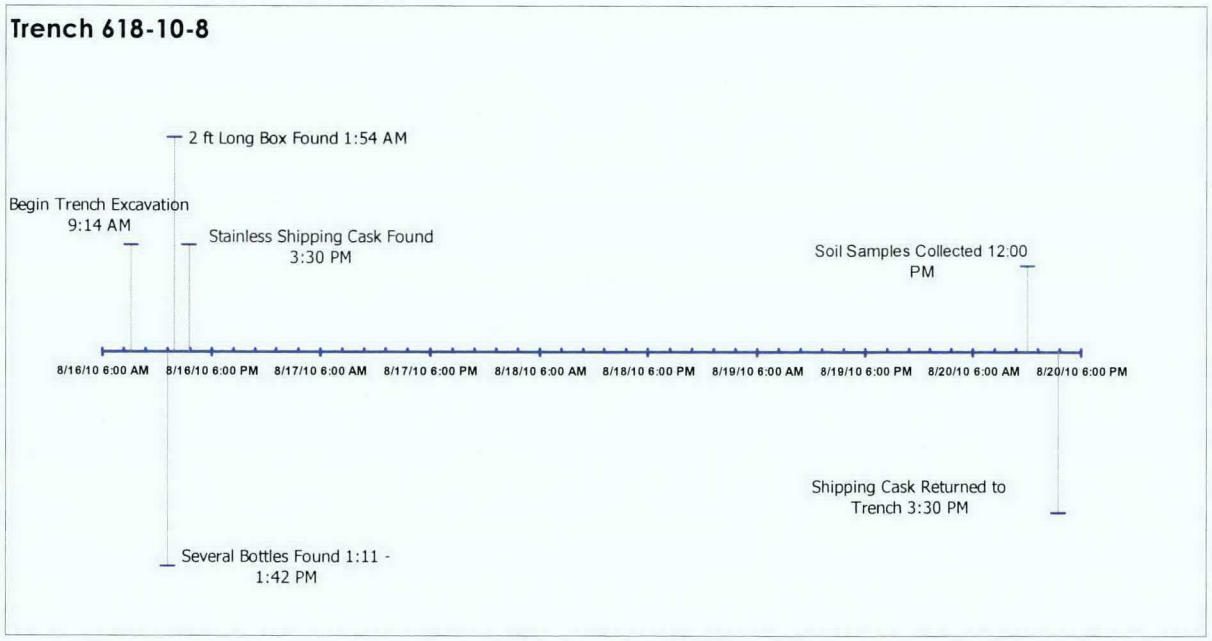


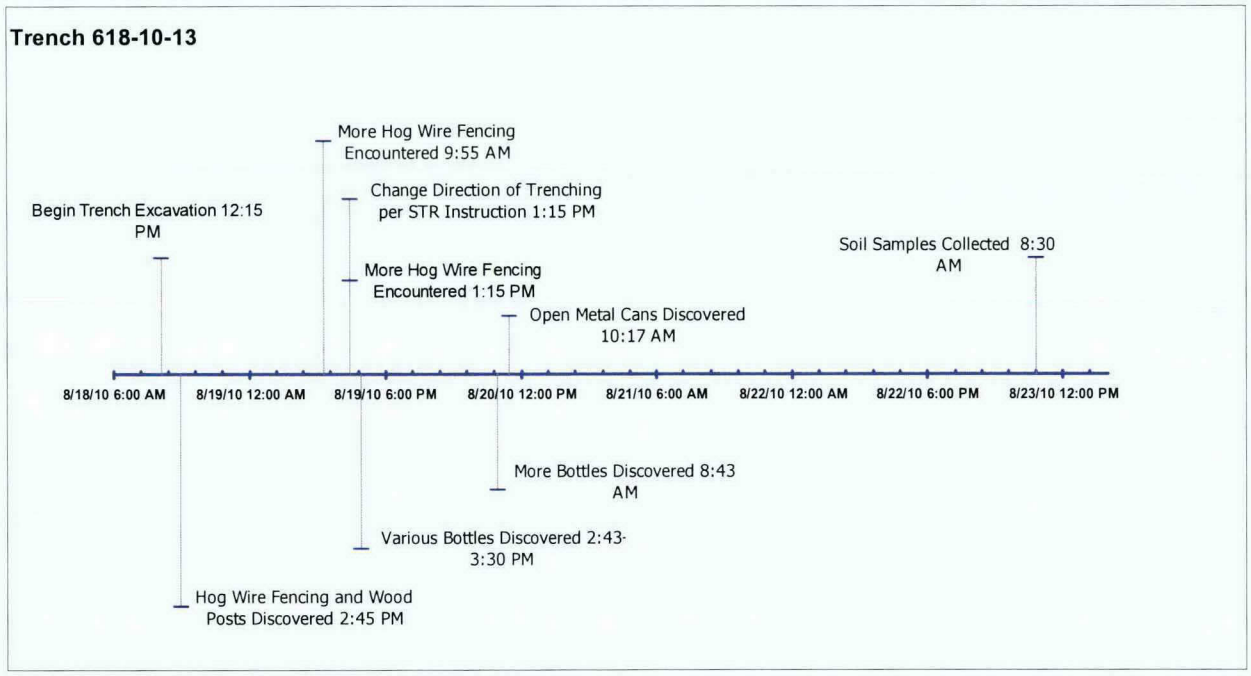

**Figure 9. Timeline History for the 618-10-8 Test Pit.**



### 6.2.3 618-10-13 Test Pit

The timeline of events occurring during the intrusive characterization of the 618-10-13 test pit is shown in Figure 10. The surge pit was completed August 16, 2010, and the test pit started on August 18, 2010. One of the distinguishing characteristics regarding the findings in 618-10-13 was the hog wire fencing that appeared to have been pushed in the trench following completion of filling. It is possible that the reflections shown in the geophysical surveys are influenced by the hog wire fencing (see Figure 6). On August 19, 2010, after more discoveries of hog wire fencing and no significant findings it was decided to change direction and move across the geophysical reflections. Several laboratory bottles and metal cans were discovered in the trench. No drums or large items were noted (see Section 6.3). Soil samples were collected on August 23, 2010.

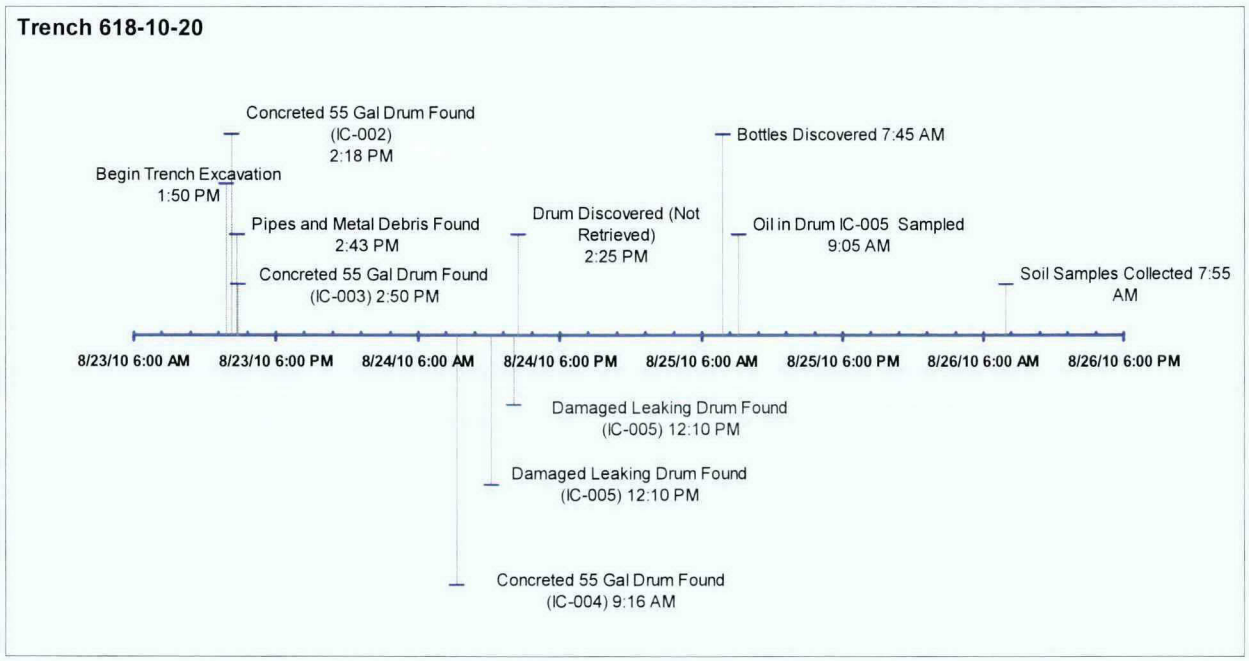
**Figure 10. Timeline History for the 618-10-13 Test Pit.**




### 6.2.4 618-10-20 Test Pit

The timeline of events occurring during the intrusive characterization of the 618-10-20 test pit is shown in Figure 11. The surge pit was completed on August 20, 2010, and the test pit was started on August 23, 2010. There were several significant findings in 618-10-20 including concreted drums and one damaged drum containing oil. Three concreted drums and the oil drum were removed from the trench. The concreted drums were screened with the PNNL NDA instrumentation (see Sections 7.0 and 8.0) and the oil in the damaged drum sampled. Metal pipes were also discovered in the trench. Soil samples were collected on August 26, 2010.

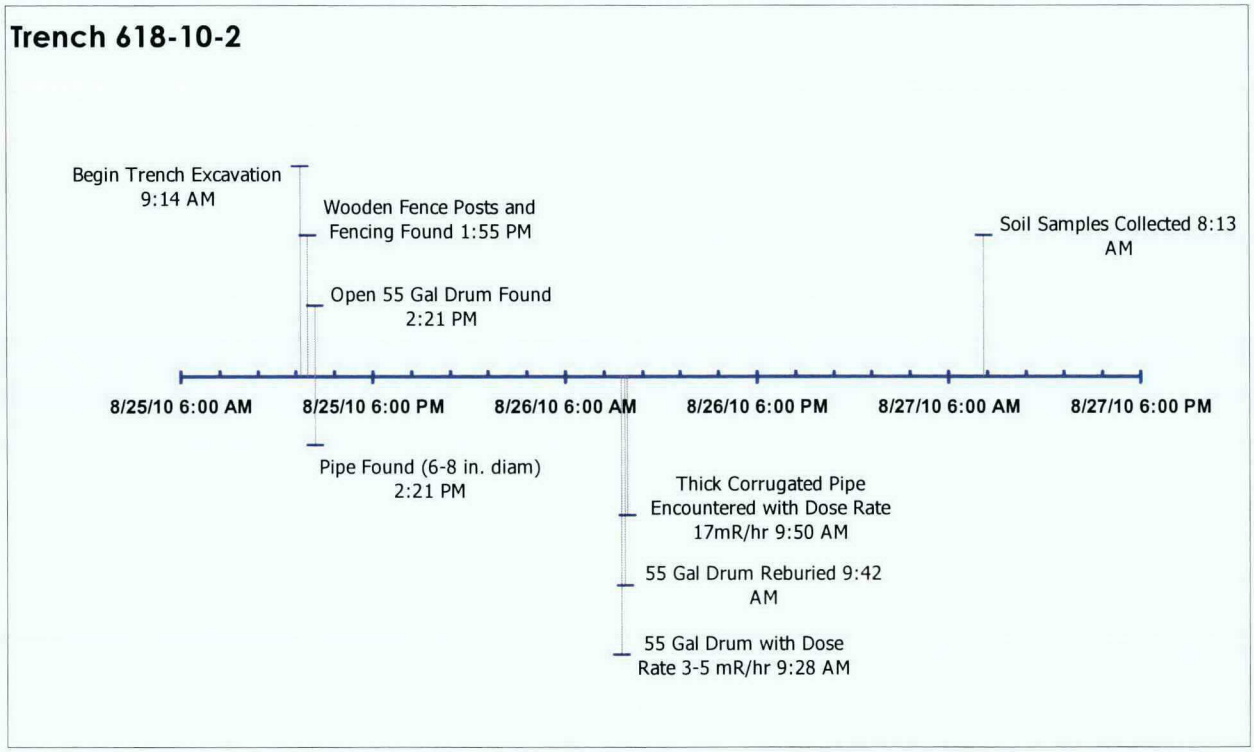
**Figure 11. Timeline History for the 618-10-20 Test Pit.**




### 6.2.5 618-10-2 Test Pit

The timeline of events occurring during the intrusive characterization of the 618-10-2 test pit is shown in Figure 12. The surge pit was completed on August 23, 2010, and the test pit was started on August 25, 2010. Several significant findings were discovered in 618-10-2, including a high-dose-rate uranium drum (5 mrem/hr) and a vertical corrugated culvert with a high dose rate (maximum measured dose rate was 17 mrem/hr). Metal piping and fencing with wood posts were discovered in the trench. No anomalies were recovered after the high-dose culvert was reburied, and trench excavation was stopped. Soil samples were collected on August 27, 2010.

**Figure 12. Timeline History for the 618-10-2 Test Pit.**




## 6.3 TEST PIT SOIL PROFILES

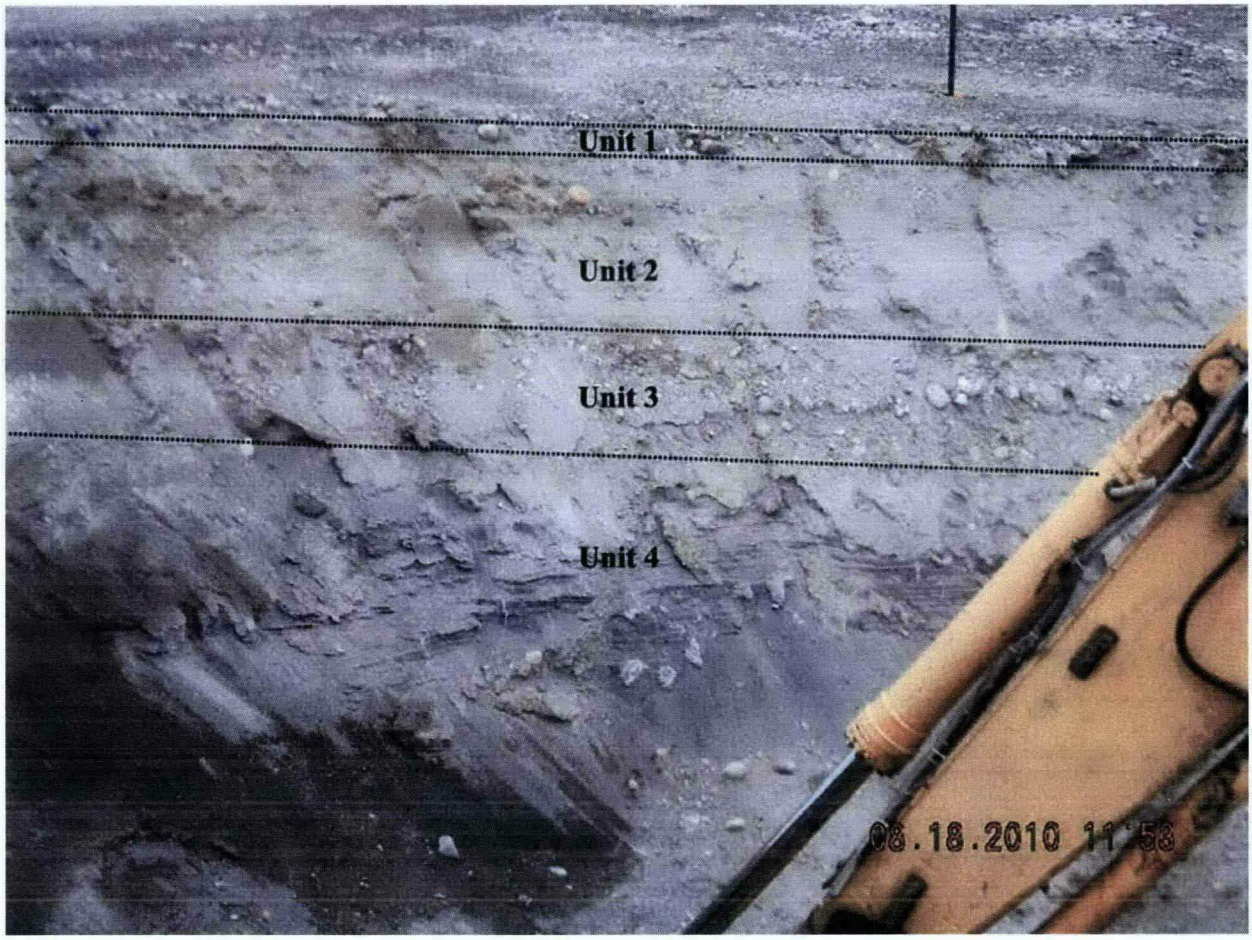
Several observations were made and noted with regard to the physical makeup of the burial ground trenches. There appeared to be a distinct layering of fill materials used in the trench as shown in Figure 13, a photograph of the trench bank in 618-10-13. The soil profile in the photograph reveals layered sand, gravel, and cobbles. A description of the bank material lithology and stratigraphy is provided in CCN 153714, "618-10 Test Pit Investigation — Geologic Description." Because of the steep side wall slopes, no entry into the excavation was allowed, and therefore all observations occurred outside of the excavation. The generalized subsurface profile at this location consists of Holocene age active and stabilized dune sand overlying Quaternary age outburst-flood deposits of the Hanford formation consisting of silt, sand, and gravel.

The following lithologic units were observed in the test pit sidewall, beginning at surface grade (Figure 13):

- Unit 1: Thin veneer of gravel fill material recently added to the site surface as stabilization for field activities.
- Unit 2: Approximately 0.9 m (3 ft) of active to stabilized native dune sand consisting of light brown to tan, eolian (wind-blown) medium to fine sand and silt.
- Unit 3: Approximately 0.3 m (1 ft) of unconsolidated fill, poorly sorted gravel with sand and silt, suspected to have been placed at the site for stabilization of radiological contamination in 1983.

- Unit 4: Minimum of 2.7 m (9 ft) of native, well sorted, thin-bedded, plane-laminated, fluvial deposited, light gray silt to fine sand.

**Figure 13. Lithologic Units Exposed in Test Pit Sidewall of the 618-10-13 Test Pit.**




The fill material layering, in addition to the flat hog wire fencing, was likely manifested in the geophysical reflections shown in Figures 3 and 6, which contributed to an inaccurate interpretation of the geophysical signatures expected initially to represent flat metal surfaces or stacked metal drums.

In addition to the fill material used by the workers during the filling of the trenches, the natural affects of wind blowing sand across and from the burial ground are manifested in dunes surrounding the burial ground. One large accumulation of sand has built up over the years on the northeast corner of the site. Some of the fill material and soil used to stabilize the burial ground surface may have been worn thin with the successive years of blowing wind. It is possible that the build-up of sand over the northeast corner of the burial ground (including the 618-10-13 trench) prevented the excavator from reaching the lower levels.

# 7.0 SAMPLING AND CHARACTERIZATION

## 7.1 SAMPLE DESIGN SUMMARY

Sampling and analysis was performed in accordance with DOE/RL-2009-64, *Sampling and Analysis Plan for Intrusive Characterization of 618-10 Burial Ground Trenches*. Because the total number of buried drums and the nature/variability of their contents are unknown, a nonstatistical design was used for the intrusive characterization of the 618-10 Burial Ground trenches. Data were collected to support developing plans and processes for full-scale remedial action operations at the site. Excavation locations were focused in the 618-10 Burial Ground areas that are most likely to have buried drums present based on historical records and geophysical survey results. Six test pits were initially planned for excavation with a total time constraint of approximately 1 month for the intrusive characterization task. Five of the six planned trenches were completed during the 1-month time frame.

The characterization and sampling activities conducted as part of the field intrusive characterization included the following:

- Cross-trench or pothole select trenches based on previous geophysical studies (BHI-00291, GI 0602202) and readings from in situ radionuclide characterization information using an MDP assembly
- Analyze soil samples on a grid across and at depth for each cross-trench (see Section 7.2)
- Collect anomalies (including drums) and catalog waste types, distribution, and quantity from within the selected trenches
- Analyzed samples to the extent possible using real-time field analytical techniques including NDA with PNNL In Situ Object Counting System (ISOCS) gamma spectrometer and passive neutron detectors
- Determine if geophysical studies and in situ radionuclide characterization (nonintrusive characterization) information, coupled with information collected during intrusive characterization, are sufficient to support design solutions and remediation of 618-10 Burial Ground trenches
- Determine if sampling methods, field analytical techniques, laboratory techniques, and soil fixatives are adequate to support remediation.

In addition to the sampling described above, during all phases of the field investigation, IH and radiological surveys were conducted to collect chemical and radiochemical information from the breathing zone and general work areas. These data will not be presented in this report.

## 7.2 SOIL AND DEBRIS

Soil and debris were not removed in bulk from the burial ground during intrusive characterization. No free liquids or bottles containing free liquids were identified during the field investigation. Soil and bulk materials were screened and moved from their original location to a

second location within the surge pit or test pit as part of the test pitting sorting and screening process, the intent being that soil and bulk materials remain in the burial trench until full-scale remediation is performed. Soil samples were collected within the test pits in a grid pattern. Soil samples were collected with the excavator removing material from the specified grid area location in the test pit, and the bucket brought to the high radiation area/radiological buffer area rope boundary where the sampler removed material from the bucket in a partial entry. The soil samples were analyzed for the analytes listed in Table 1. Tables 2 through 6 list the soil samples, and Figures 14 through 18 show the locations of samples collected from the five test pits.

**Table 2. Soil Samples Collected from 618-10-1.**

| Trench | Sample Date | Sample Numbers | Laboratory Analyses | Location |
|---|---|---|---|---|
| 618-10-1 surge pit | 08/05/10 | J19XC9 | RCF/EB/LVLI | Surge pile 618-10-1 |
| | | J1C062 | TARL IH | |
| | 08/09/10 | J1C057 | RCF/EB/LVLI | Surge pile 618-10-1 |
| | | J1C063 | TARL IH | |
| 618-10-1 test pit | 08/13/10 | J1C093 | RCF/EB/LVLI | 618-10-1 test pit northeast section |
| | | J1C064 | RCF/EB/LVLI | 618-10-1 test pit north middle |
| | | J1C095 | RCF/EB/LVLI | 618-10-1 test pit northwest section |
| | | J1C096 | RCF/EB/LVLI | 618-10-1 test pit southwest section |
| | | J1C097 | RCF/EB/LVLI | 618-10-1 test pit south middle |
| | | J1C098 | RCF/EB/LVLI | 618-10-1 test pit southeast section |
| Soil sample, oil drum 618A-10-0067 | 08/17/10 | J1C0X6 | RCF/EB/LVLI | Leaking oil drum in B-12 box 618A-10-0067 (soil sample) |

Source: Logbook EL-1648, *618-10 and 618-11 Nonintrusive, Intrusive and Remediation Sampling.*

EB = Eberline Laboratories (general radionuclide)
LVLI = Lionville Laboratories (metals, VOCs, and SVOCs)
RCF = Eberline/ Lionville Laboratories Radiological Counting Facility (gamma spectral analysis)
SVOC = semivolatile organic compound
TARL IH = Test America Richland Laboratories (asbestos)
VOC = volatile organic compound

**Figure 14. 618-10-1 Soil Sample Locations.**

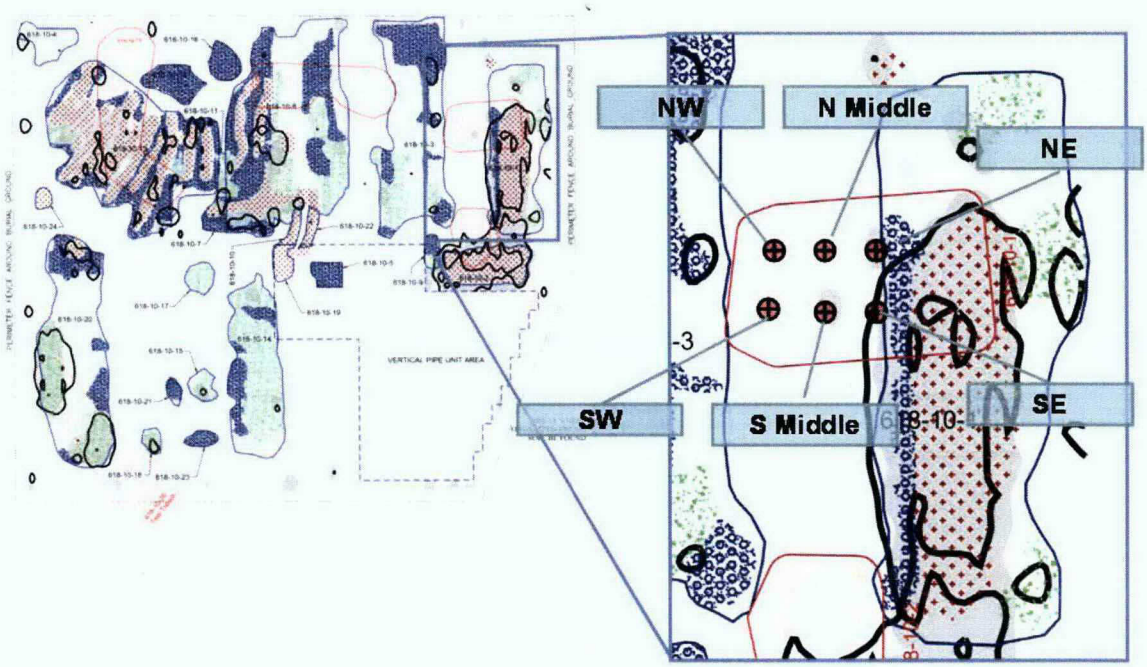



**Table 3. Soil Samples Collected from 618-10-8.**

| Trench | Sample Date | Sample Numbers | Laboratory Analyses | Location |
|---|---|---|---|---|
| 618-10-8 surge pit | 08/09/10 | J1C058 | RCF/EB/LVLI | Surge pile 618-10-8 |
| | | J1C064 | TARL IH | |
| | 08/10/10 | J1C059 | RCF/EB/LVLI | Surge pile 618-10-8 |
| | | J1C065 | TARL IH | |
| 618-10-8 test pit | 08/20/10 | J1C099 | RCF/EB/LVLI | 618-10-8 test pit grid #1 |
| | | J1C075 | TARL IH | |
| | | J1C0B0 | RCF/EB/LVLI | 618-10-8 test pit grid #2 |
| | | J1C076 | TARL IH | |
| | | J1C0B1 | RCF/EB/LVLI | 618-10-8 test pit grid #3 |
| | | J1C077 | TARL IH | |
| | | J1C0B2 | RCF/EB/LVLI | 618-10-8 test pit grid #4 |
| | | J1C078 | TARL IH | |
| | | J1C0B3 | RCF/EB/LVLI | 618-10-8 test pit grid #5 |
| | | J1C079 | TARL IH | |
| | | J1C0B4 | RCF/EB/LVLI | 618-10-8 test pit grid #6 |
| | | J1C080 | TARL IH | |
| | | J1C0C1 | RCF/EB/LVLI | 618-10-8 test pit grid #3 duplicate |
| | | J1C087 | TARL IH | |

Source: Logbook EL-1648, *618-10 and 618-11 Nonintrusive, Intrusive and Remediation Sampling.*

EB = Eberline Laboratories (general radionuclide)
LVLI = Lionville Laboratories (metals, VOCs, and SVOCs)
RCF = Eberline/ Lionville Laboratories Radiological Counting Facility (gamma spectral analysis)
SVOC = semivolatile organic compound
TARL IH = Test America Richland Laboratories (asbestos)
VOC = volatile organic compound

**Figure 15. 618-10-8 Soil Sample Locations.**

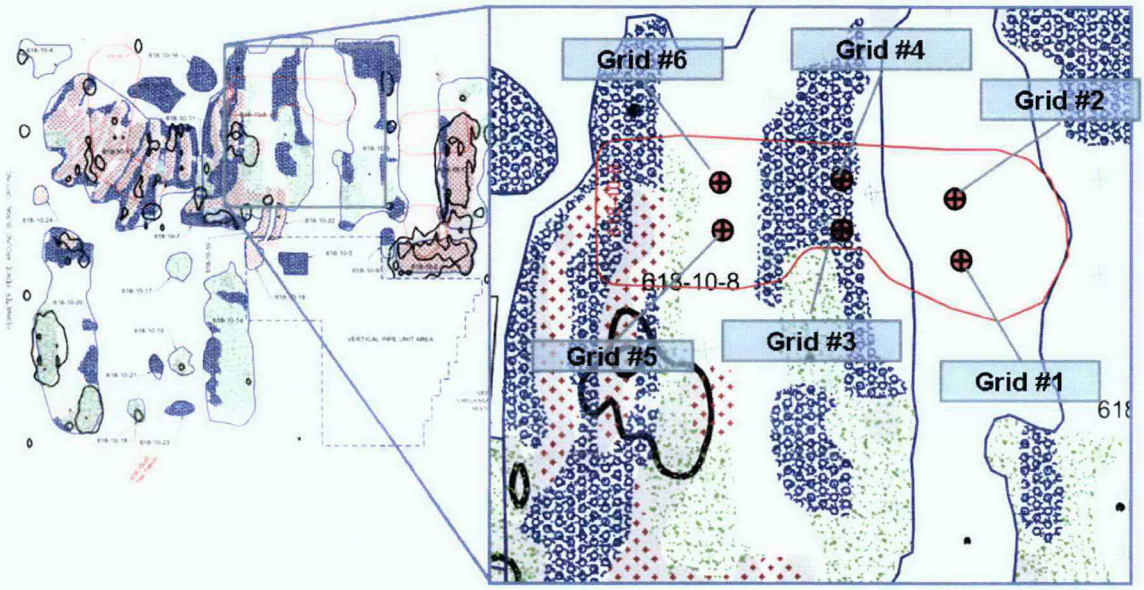



**Table 4. Soil Samples Collected from 618-10-13.**

| Trench | Sample Date | Sample Numbers | Laboratory Analyses | Location |
|---|---|---|---|---|
| 618-10-13 surge pit | 08/11/10 | J1C060 | RCF/EB/LVLI | Surge pile 618-10-13 #1 |
| | | J1C066 | TARL IH | |
| | | J1C061 | RCF/EB/LVLI | Surge pile 618-10-13 #2 |
| | | J1C068 | TARL IH | |
| 618-10-13 test pit | 08/23/10 | J1C0B5 | RCF/EB/LVLI | 618-10-13 test pit grid #1 |
| | | J1C081 | TARL IH | |
| | | J1C0B6 | RCF/EB/LVLI | 618-10-13 test pit grid #2 |
| | | J1C082 | TARL IH | |
| | | J1C0B7 | RCF/EB/LVLI | 618-10-13 test pit grid #3 |
| | | J1C083 | TARL IH | |
| | | J1C0B8 | RCF/EB/LVLI | 618-10-13 test pit grid #4 |
| | | J1C084 | TARL IH | |
| | | J1C0B9 | RCF/EB/LVLI | 618-10-13 test pit grid #5 |
| | | J1C085 | TARL IH | |
| | | J1C0C0 | RCF/EB/LVLI | 618-10-13 test pit grid #6 |
| | | J1C086 | TARL IH | |
| | | J1C0C2 | RCF/EB/LVLI | 618-10-13 test pit grid #7 |
| | | J1C1J3 | TARL IH | |
| | | J1C1D3 | RCF/EB/LVLI | 618-10-13 test pit grid #8 |
| | | J1C1J4 | TARL IH | |

Source: Logbook EL-1648, *618-10 and 618-11 Nonintrusive, Intrusive and Remediation Sampling.*

EB = Eberline Laboratories (general radionuclide)
LVLI = Lionville Laboratories (metals, VOCs, and SVOCs)
RCF = Eberline/ Lionville Laboratories Radiological Counting Facility (Gamma Spectral Analysis)
SVOC = semivolatile organic compound
TARL IH = Test America Richland Laboratories (asbestos)
VOC = volatile organic compound

**Figure 16. 618-10-13 Soil Sample Locations.**

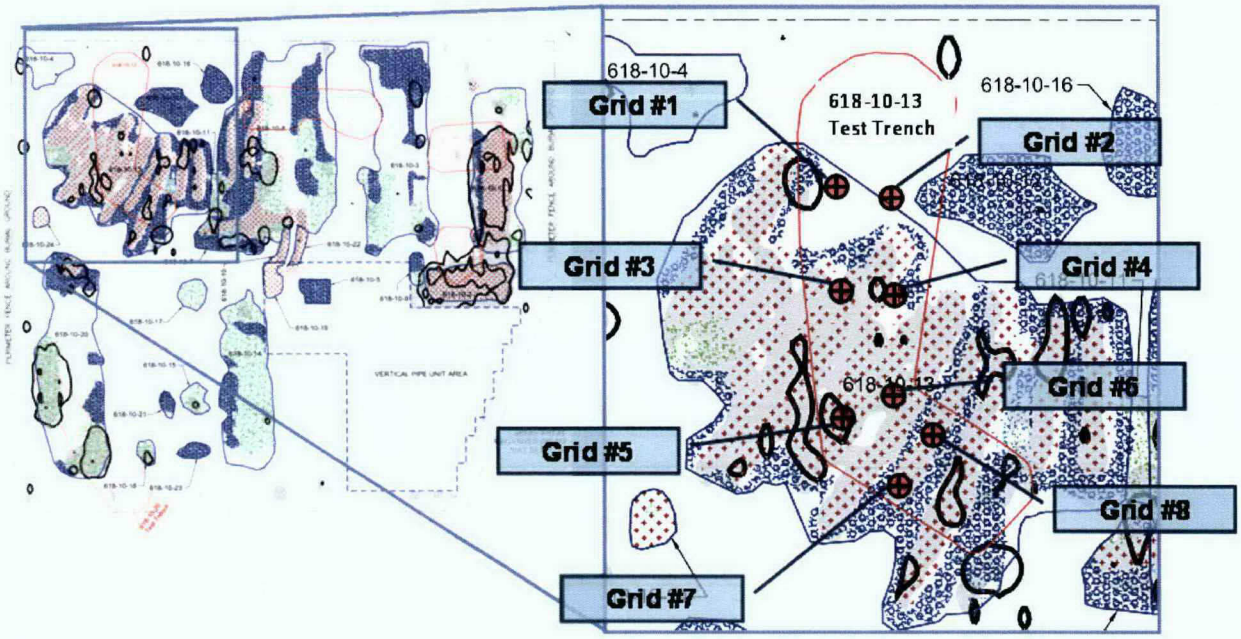



**Table 5. Soil Samples Collected from 618-10-20.**

| Trench | Sample Date | Sample Numbers | Laboratory Analyses | Location |
|---|---|---|---|---|
| 618-10-20 surge pit | 08/26/10 | J1C1F1 | EB/LVLI | 618-10-20 surge pile #1 |
| | | J1C1K2 | RCF/TARL IH | |
| | | J1C1F2 | EB/LVLI | 618-10-20 surge pile #2 |
| | | J1C1K3 | RCF/TARL IH | |
| | | J1C1F3 | EB/LVLI | 618-10-20 surge pile #3 |
| | | J1C1K4 | RCF/TARL IH | |
| 618-10-20 test pit | 08/26/10 | J1C1J6 | EB/LVLI | 618-10-20 test pit grid #1 |
| | | J1C1D5 | RCF/TARL IH | |
| | | J1C1J7 | EB/LVLI | 618-10-20 test pit grid #2 |
| | | J1C1D6 | RCF/TARL IH | |
| | | J1C1J8 | EB/LVLI | 618-10-20 test pit grid #3 |
| | | J1C1D7 | RCF/TARL IH | |
| | | J1C1J9 | EB/LVLI | 618-10-20 test pit grid #4 |
| | | J1C1D8 | RCF/TARL IH | |
| | | J1C1K0 | EB/LVLI | 618-10-20 test pit grid #5 |
| | | J1C1D9 | RCF/TARL IH | |
| | | J1C1K1 | EB/LVLI | 618-10-20 test pit grid #6 |
| | | J1C1F0 | RCF/TARL IH | |

Source: Logbook EL-1648, *618-10 and 618-11 Nonintrusive, Intrusive and Remediation Sampling.*

EB = Eberline Laboratories (general radionuclide)
LVLI = Lionville Laboratories (metals, VOCs, and SVOCs)
RCF = Eberline/ Lionville Laboratories Radiological Counting Facility (gamma spectral analysis)
SVOC = semivolatile organic compound
TARL IH = Test America Richland Laboratories (asbestos)
VOC = volatile organic compound

**Figure 17. 618-10-20 Soil Sample Locations.**

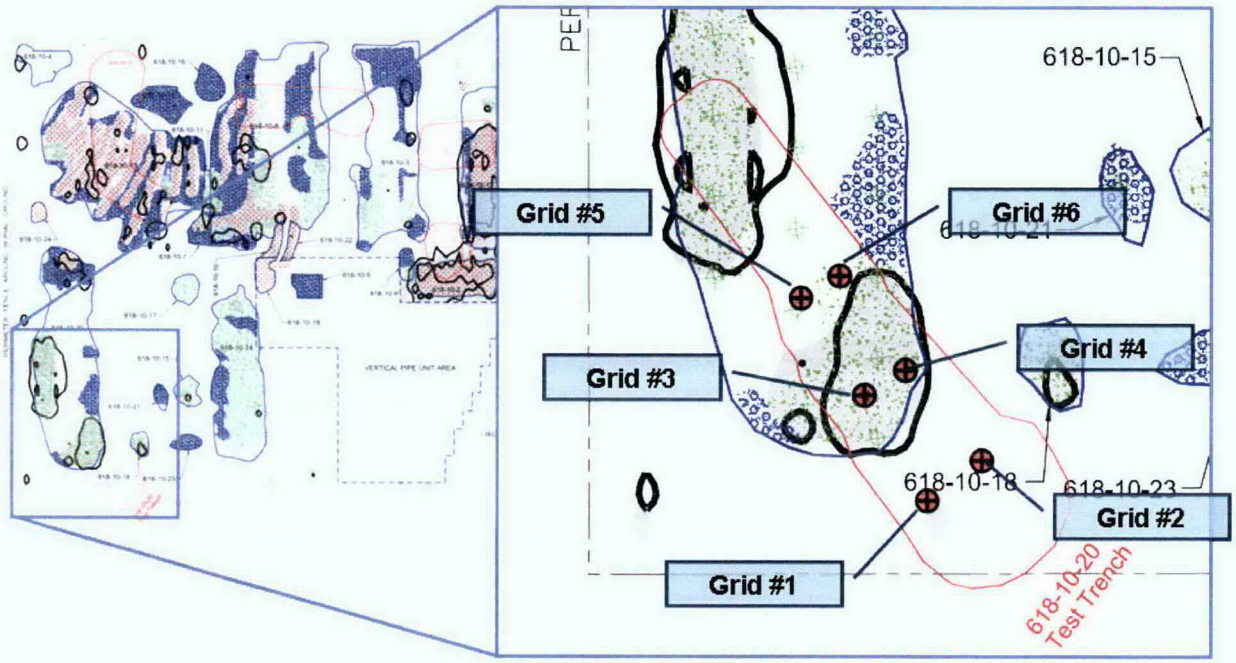


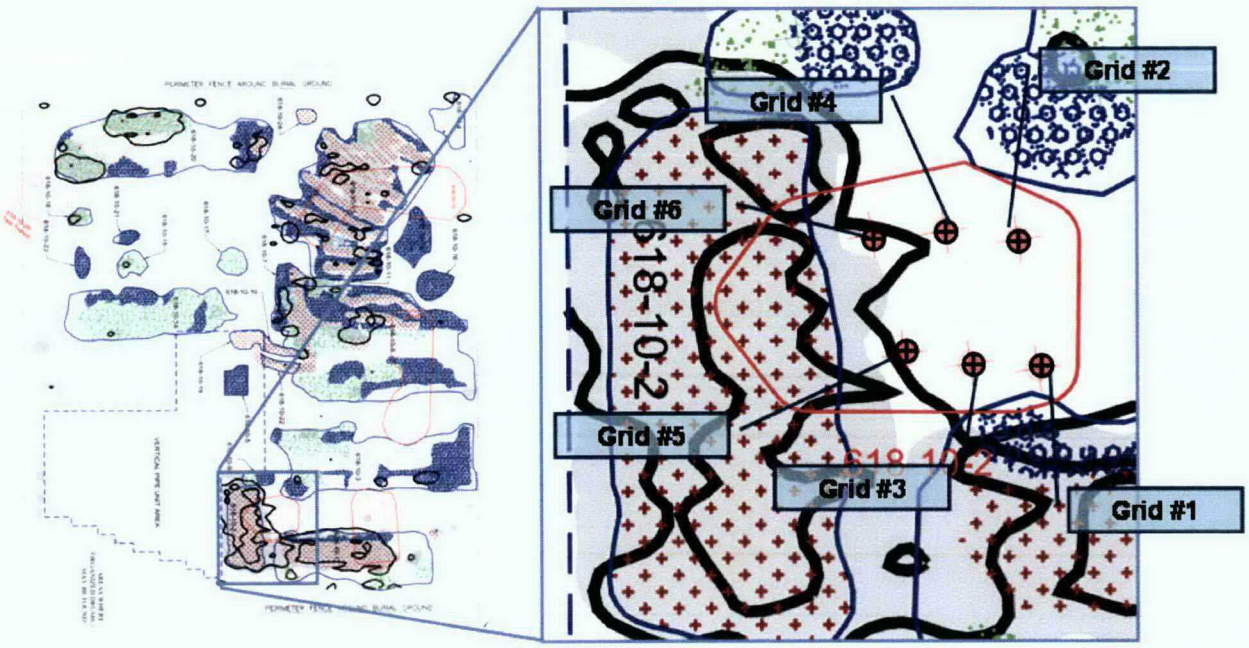

**Table 6. Soil Samples Collected from 618-10-2.**

| Trench | Sample Date | Sample Numbers | Laboratory Analyses | Location |
|---|---|---|---|---|
| 618-10-2 surge pit | 08/25/10 | J1C1D4 | EB/LVLI | 618-10-2 surge pile |
| | | J1C1J5 | RCF/TARL IH | 618-10-2 surge pile |
| 618-10-2 test pit | 08/27/10 | J1C1K5 | EB/LVLI | 618-10-2 test pit grid #1 |
| | | J1C1F4 | RCF/TARL IH | |
| | | J1C1K6 | EB/LVLI | 618-10-2 test pit grid #2 |
| | | J1C1F5 | RCF/TARL IH | |
| | | J1C1K7 | EB/LVLI | 618-10-2 test pit grid #3 |
| | | J1C1F6 | RCF/TARL IH | |
| | | J1C1K8 | EB/LVLI | 618-10-2 test pit grid #4 |
| | | J1C1F7 | RCF/TARL IH | |
| | | J1C1K9 | EB/LVLI | 618-10-2 test pit grid #4 duplicate |
| | | J1C1F8 | RCF/TARL IH | |
| | | J1C1L0 | EB/LVLI | 618-10-2 test pit grid #5 |
| | | J1C1F9 | RCF/TARL IH | |
| | | J1C1L1 | EB/LVLI | 618-10-2 test pit grid #6 |
| | | J1C1H0 | RCF/TARL IH | |

Source: Logbook EL-1648, *618-10 and 618-11 Nonintrusive, Intrusive and Remediation Sampling.*

EB = Eberline Laboratories (general radionuclide)
LVLI = Lionville Laboratories (metals, VOCs, and SVOCs)
RCF = Eberline/ Lionville Laboratories Radiological Counting Facility (gamma spectral analysis)
SVOC = semivolatile organic compound
TARL IH = Test America Richland Laboratories (asbestos)
VOC = volatile organic compound

**Figure 18. 618-10-2 Soil Sample Locations.**




## 7.3 DRUMS

One of the primary interests was the collection of drums, with emphasis on concreted drums expected to contain alpha-emitting radionuclides. Drums were expected to be located within burial pits showing a strong reflective surface as detected during the geophysical surveys (see Section 2.0). Planning included the excavation, removal, inspection, and characterization of approximately 10 to 20 drums. If possible, the drums were to be excavated from different areas of the burial ground while minimizing the overall disturbed areas and number of drums excavated. General observations of the depth, orientation, layering, and condition of unearthed drums were to be recorded. Planned excavation of drums included selection for characterization based on a preference to obtain information from drums with dissimilar exterior features (e.g., size, type, and markings). It was recognized that the degree to which these objectives can be met may be affected by project schedule constraints.

During the intrusive characterization activities, drums were found in three of the five test pits (618-10-1, 618-10-20, and 618-10-2). A total of five drums were retrieved from the test pits: one depleted uranium drum from 618-10-1, three concreted drums from 618-10-20, and one oil-filled drum from 618-10-20. Several depleted uranium drums were discovered in 618-10-1, and one high-dose (5 mrem/hr) uranium oxide drum was unearthed in 618-10-2. Only one uranium-containing drum was retrieved from the pit because it was determined that the fire risk outweighed the benefit of characterizing the drum contents. Based on previous burial ground remedial activities (e.g., 618-7 Burial Ground), sufficient knowledge is available for drums containing depleted uranium and uranium oxide. The total number of retrieved drums was limited by the types and location of drums uncovered during the intrusive activities. Only a few locations were found with multiple drums (e.g., concreted drums in 618-10-20 and depleted uranium drums in 618-10-1), and it was determined that only a select representative few should be retrieved from each location. A list and description of the drums retrieved during the intrusive

characterization is provided in Table 7. Figure 19 shows photographs of one of the concreted drums (IC-003) including a closeup of the drum top showing picking eye and a circular crack around the perimeter, suggesting a concrete plug or cap was placed over the drum cavity. Several other uranium and concreted drums were observed, but not retrieved from the burial ground.

As directed by the field superintendent (or designee), excavated drums were overpacked within the AOC in accordance with the approved means and methods. During the overpacking process, the temperatures of the drums were checked and recorded. No abnormal temperature readings were observed. Because of the nature of drums removed from the test pits, no drums were punched and sampled using the DPF. The DPF was used to observe and remotely monitor the concreted drums to establish a safe-to-approach condition.

## 7.4 OTHER ANOMALIES

Several other anomalies (other than drums) were observed and monitored for radioactivity during the intrusive field activities. These anomalies included the following:

- Various laboratory bottles
- Open metal cans
- Hog wire fencing
- Metal pipe (various sizes)
- A stainless steel transportation cask ("pig")
- Vertical corrugated culvert pipe (with high dose rate).

None of the laboratory bottles, metal cans, fencing, or pipes showed dose rates above background. Of particular interest were the transportation cask and the vertical culvert. The transportation cask (Figure 20) was removed from the 618-10-8 test pit at about 4.6 m (15 ft) bgs. The cask was monitored in place then transferred to the NDA station where it was weighed and scanned with the ORTEC® Detective. The weight of the cask was 843 kg (1,858 lbs), and there was no measureable dose above background. The cask was eventually returned back to the excavation and the Geographical Information System (GIS) coordinates noted for future reference.

® ORTEC is a registered trademark of Advanced Measurement Technology, Inc.

**Table 7. Drums Retrieved from the 618-10 Burial Ground During Intrusive Characterization.**

| Trench | Anomaly | Date Discovered | Anomaly Number | Drum Weight | Disposition/Status |
|---|---|---|---|---|---|
| 618-10-1 test pit | 114-L (30-gal) drum retrieved from pit near several other drums at about 1.5 m (5 ft) bgs | 08/12/10 | IC-001 | 1,002 kg (2,208 lbs)[a] | Drum placed in B-12 box #618A-10-0067. Drum weight indicated depleted uranium. Soil around drum was sampled (see sample no. J1C0X6) and drum was reburied in the 618-10-20 test pit. |
| 618-10-20 test pit | 208-L (55-gal) concreted drum with picking eye found at about 3 to 3.7 m (10 to 12 ft) bgs | 08/23/10 | IC-002 | 784 kg (1,728 lbs)[b] | Drum was white with a blue stripe around center and labeled with "Prestone Anti-Freeze." PNNL ISOCS and neutron slab NDA performed. |
| | 208-L (55-gal) concreted drum with picking eye found at about 3 to 3.7 m (10 to 12 ft) bgs | 08/23/10 | IC-003 | 541 kg (1,192 lbs)[b] | Drums had rusty exterior. There was a noticeable crack around the picking eye (see Figure 19). Measured dose rate was 0.039 mrem. PNNL ISOCS and neutron slab NDA performed. |
| | 208-L (55-gal) concreted drum with picking eye at 0.9 to 1.2 m (3 to 4 ft) bgs | 08/24/10 | IC-004 | 548 kg (1,208 lbs)[b] | The drum was black with a white center with labels "CHEMICAL," "PITTSBURGH", "...TET...." Measured dose rate was 0.3 mrem. PNNL ISOCS and neutron slab NDA performed. |
| | 208-L (55-gal) mangled drum found at about 0.9 m (3 ft) bgs | 08/24/10 | IC-005 | 120 kg (264 lbs)[c] | Drum appeared to be leaking purple oil. The drum and contaminated soil was placed in a 416-L (110-gal) overpack. The drum contents (liquid/oil) were sampled (sample no. J1N1C7). |
| 618-10-2 test pit | 208-L (55-gal) uranium drum found at about 4.6 m (15 ft) bgs | 08/26/10 | N/A | N/A | Initial radiological readings indicated a dose rate of 3.1 to 5.4 mR/hr. ORTEC® readings indicated the drum contents were "nuclear uranium" or uranium oxide. The drum was reburied in the pit and the location noted. |

[a] Includes weight of B-12 box (nominal weight = 700 lbs) and soil (unknown weight)
[b] Includes weight of 322-L (85-gal) drum overpack (nominal weight = 35 kg [78 lbs]).
[c] Includes weight of 416-L (110-gal) drum overpack (nominal weight = 64 kg [141 lbs]).

bgs = below ground surface
ISOCS = In Situ Object Counting System
N/A = not applicable
NDA = nondestructive assay
PNNL = Pacific Northwest National Laboratory

**Figure 19. Concreted Drum IC-003.**

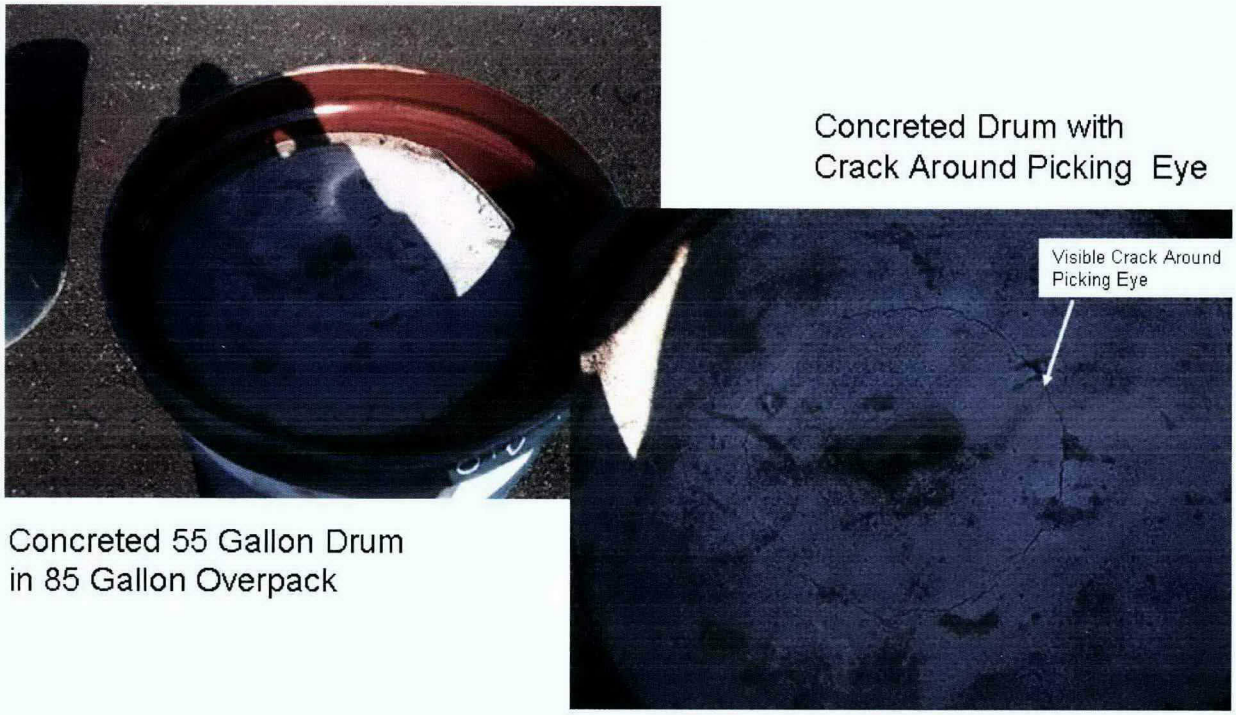



**Figure 20. Stainless Steel Transportation Cask Discovered in 618-10-8.**

The vertical corrugated metal culvert was discovered in the 618-10-2 test pit. The pipe diameter appeared to be 30 to 46 cm (12 to 18 in.) The culvert section was found as the gamma detector mounted on the bucket passed over the culvert and showed elevated readings. The culvert section was monitored in place and with a maximum reading of 17 mR/hr. The excavator operator was instructed by the site superintendant to bury the culvert until the readings were at 0 mR/hr. After the culvert was buried, the excavation activities in 618-10-2 were ended. Figure 21 shows the exposed culvert being monitored by the excavator mounted gamma rate meter.

**Figure 21. Corrugated Metal Pipe Culvert Discovered in 618-10-2.**

## 7.5 PHYSICAL INSPECTION AND NONDESTRUCTIVE ASSAY

The project samplers performed and documented a nonintrusive, physical inspection of each drum and anomalous item removed from the pits. Drums and anomalous items were placed in overpack drums or B-12 boxes before being moved to the drum inspection area. Information gathered/recorded during the physical inspection included the following:

- General observations of the drum condition
- Drum size
- Weight
- Any markings present on the drum exterior

- Temperature
- IH survey readings
- Radiological surveys.

NDA radiological surveys were performed on drums in the drum inspection area with a stationary ORTEC® gamma spectrometer, and a PNNL-supplied ISOCS (gamma spectrometer) and passive neutron slab detector. Figure 22 shows the PNNL ISOCS and passive neutron detector configuration in a conex box. Characteristics of the PNNL NDA system are as follows:

- Gamma spectral analysis with ISOCS, Canberra broad energy germanium detector (BEGe)

- Neutron screening system was composed of two neutron slab detectors comprising twenty 74-cm (29-in.) long, 4-atm, He-3 tubes

- Ge detector was factory qualified by Canberra and the neutron system was calibrated using National Institute of Standards and Technology (NIST) traceable 252Cf and plutonium working reference material

- Gamma spectra and neutron measurements were collected for 20 min.

Mobile NDA and RTR tomographic services were initially proposed for the concreted drums excavated during intrusive characterization, with emphasis on drums containing alpha-emitting radionuclides. Because of scheduling conflicts and other logistical issues, the mobile NDA and RTR services were not available during the intrusive characterization. Additionally, the PNNL NDA screening showed no alpha-emitting contamination in the concreted drums retrieved from the burial ground. Use of the NDA and RTR services is currently being evaluated for potential use during the remediation phase. Concreted drums removed from the burial ground during intrusive characterization may be further screened with the NDA and RTR services, depending on the outcome of the evaluation.

**Figure 22. PNNL-Supplied ISOCS (Gamma Spectrometer) and Passive Neutron Slab.**

# 8.0 INTRUSIVE CHARACTERIZATION SAMPLE RESULTS

## 8.1 DRUMS AND ANOMALIES

Results reported in this section include results from the NDA analyses performed on the three concreted drums (anomalies IC-002, IC-003, and IC-004) and the damaged oil drum (IC-005). All four drums were collected from 618-10-20. The NDA results were taken from PNNL letter report CCN 153759, "Results of Nondestructive Assay (NDA) Measurements of Four Drums Performed on August 23-24, 2010 by Pacific Northwest National Laboratory (PNNL) NDA Service Center." The gamma spectral analysis and neutron measurement NDA results are presented in Tables 8 through 11. Drums IC-002 and IC005 showed no radionuclides, while drum IC-003 showed moderate amounts of cesium-137 and europium-154 and drum IC-004 showed moderate amounts of cesium-137. No alpha-emitting (TRU) radionuclides were found in any of the screened drums. The laboratory analytical results from the oil drum are provided in Appendix B (sample number J1C1N7). The four drums will remain on-site until remediation of the trenches is performed. The drums may receive additional characterization during the remediation phase including screening with commercial NDA and RTR services.

**Table 8. PNNL ISOCS (Gamma Spectral Analysis) and Neutron Slab Results for IC-002.**

Gamma Measurement Results

| Drum | IC-002 | |
|---|---|---|
| Gross weight | 1728 lbs (783.8 kg) | |
| Isotope | Activity (µCi) | MDA |
| Cobalt-60 | < | 1.943E-05 |
| Niobium-94 | < | 1.092E-04 |
| Cesium-134 | < | 2.148E-04 |
| Cesium-137 | < | 7.821E-04 |
| Europium-152 | < | 7.757E-05 |
| Europium-154 | < | 8.059E-05 |
| Europium-155 | n/a | n/a |
| Uranium-235 | < | 3.358E+16 |
| Uranium-238 | < | 7.605E-03 |
| Neptunium-237 | < | 8.146E+06 |
| Neptunium-239 | < | 3.950E+06 |
| Plutonium-239 | < | 2.698E+04 |
| Amercium-241 | n/a | n/a |

Drum Description:
55 Gal Shielded Drum (2" Lead/5" Concrete Inside 85 Gal Overpack Drum

Neutron Measurement Results

| | |
|---|---|
| Plutonium-240 (eff) (g) | < 0.02 |
| Total Plutonium mass (g) | < 0.29 |
| TRU Activity (µCi) | < 2.76E+04 |
| TRU Concentration (nCi/g) | < 3.65E+01 |

Source: CCN 153759, "Results of Nondestructive Assay (NDA) Measurements of Four Drums Performed on August 23-24, 2010 by Pacific Northwest National Laboratory (PNNL) NDA Service Center"

## Table 9. PNNL ISOCS (Gamma Spectral Analysis) and Neutron Slab Results for IC-003.

Gamma Measurement Results

| Drum | IC-003 | |
|---|---|---|
| Gross weight | 1192 lbs (540.7 kg) | |
| **Isotope** | **Activity (µCi)** | **MDA** |
| Cobalt-60 | < | 2.874E-06 |
| Niobium-94 | < | 7.012E-06 |
| Cesium-134 | < | 9.310E-06 |
| Cesium-137 | 8.465E-04 ± 1.217E-04 | 1.516E-05 |
| Europium-152 | < | 9.952E-06 |
| Europium-154 | 1.547E-05 ± 1.351E-05 | 1.373E-05 |
| Europium-155 | < | 6.946E-03 |
| Uranium-235 | < | 3.040E-04 |
| Uranium-238 | < | 7.875E-04 |
| Neptunium-237 | < | 1.665E-04 |
| Neptunium-239 | < | 5.384E-04 |
| Plutonium-239 | < | 2.880E+00 |
| Amercium-241 | < | 2.565E+00 |

Drum Description:
55 Gal Shielded Drum (5" Concrete) with Resin Inside 85 Gal Overpack Drum

Neutron Measurement Results

| | |
|---|---|
| Plutonium-240 (eff) (g) | < 0.02 |
| Total Plutonium mass (g) | < 0.27 |
| TRU Activity (µCi) | < 2.58E+04 |
| TRU Concentration (nCi/g) | < 5.05E+01 |

Source: CCN 153759, "Results of Nondestructive Assay (NDA) Measurements of Four Drums Performed on August 23-24, 2010 by Pacific Northwest National Laboratory (PNNL) NDA Service Center"

## Table 10. PNNL ISOCS (Gamma Spectral Analysis) and Neutron Slab Results for IC-004.

Gamma Measurement Results

| Drum | IC-004 | |
|---|---|---|
| Gross weight | 1208 lbs (547.9 kg) | |
| **Isotope** | **Activity (µCi)** | **MDA** |
| Cobalt-60 | < | 2.838E-06 |
| Niobium-94 | < | 7.817E-06 |
| Cesium-134 | < | 1.028E-05 |
| Cesium-137 | 1.336E-02 ± 1.880E-03 | 4.962E-05 |
| Europium-152 | < | 8.434E-06 |
| Europium-154 | < | 1.353E-05 |
| Europium-155 | < | 2.452E-02 |
| Uranium-235 | < | 1.061E-03 |
| Uranium-238 | < | 7.957E-04 |
| Neptunium-237 | < | 5.996E-04 |
| Neptunium-239 | < | 1.934E-03 |
| Plutonium-239 | < | 1.010E+01 |
| Amercium-241 | < | 8.369E+00 |

Drum Description:
55 Gal Shielded Drum (5" Concrete) with Resin Inside 85 Gal Overpack Drum

Neutron Measurement Results

| | |
|---|---|
| Plutonium-240 (eff) (g) | < 0.02 |
| Total Plutonium mass (g) | < 0.27 |
| TRU Activity (µCi) | < 2.58E+04 |
| TRU Concentration (nCi/g) | < 4.97E+01 |

Source: CCN 153759, "Results of Nondestructive Assay (NDA) Measurements of Four Drums Performed on August 23-24, 2010 by Pacific Northwest National Laboratory (PNNL) NDA Service Center"

**Table 11. PNNL ISOCS (Gamma Spectral Analysis) and Neutron Slab Results for IC-005.**

Gamma Measurement Results

| Drum | IC-005 | |
|---|---|---|
| Gross weight | 264 lbs (119.8 kg) | |
| Isotope | Activity (µCi) | MDA |
| Cobalt-60 | < | 2.576E-07 |
| Niobium-94 | < | 3.250E-07 |
| Cesium-134 | < | 3.293E-07 |
| Cesium-137 | < | 3.539E-07 |
| Europium-152 | < | 1.389E-06 |
| Europium-154 | < | 9.600E-07 |
| Europium-155 | < | 3.344E-06 |
| Uranium-235 | < | 6.493E-07 |
| Uranium-238 | < | 3.775E-05 |
| Neptunium-237 | < | 8.256E-07 |
| Neptunium-239 | < | 2.394E-06 |
| Plutonium-239 | < | 8.657E-02 |
| Amercium-241 | < | 3.394E-05 |

Drum Description:
55 Gal "Oil Leaking" Drum Inside
110 Gal Overpack Drum

Neutron Measurement Results

| | |
|---|---|
| Plutonium-240 (eff) (g) | < 0.02 |
| Total Plutonium mass (g) | < 0.30 |
| TRU Activity (µCi) | < 2.85E+04 |
| TRU Concentration (nCi/g) | < 3.36E+02 |

Source: CCN 153759, "Results of Nondestructive Assay (NDA) Measurements of Four Drums Performed on August 23-24, 2010 by Pacific Northwest National Laboratory (PNNL) NDA Service Center"

## 8.2 SOIL SAMPLE RESULTS

Laboratory analytical data sheets for the soil samples are provided in Appendix B. The results provided include general radionuclides, radionuclides determined by gamma spectral/energy analysis (GEA), metals, VOCs, and semivolatile compounds (SVOCs). No significant concentrations of chemicals or radionuclides were measured in the soils. All concentration values for COCs listed in Table 1 were below the direct exposure and ground water protection remedial action levels listed in DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area* (RDR/RAWP), for unrestricted land use. The radionuclides detected in the soils with the remedial action cleanup levels are included in Appendix C. Only a few samples showed plutonium levels above the minimum detectable activity values. None of the concentrations exceeded the RDR/RAWP cleanup levels. Tables 12 through 14 present soil sample results where plutonium levels (>1 pCi/g) were slightly elevated above the minimum detection limit (highlighted in red). The highest value was 3.09 pCi/g, well below the unrestricted direct exposure cleanup level of 38.8 pCi/g. A complete set of tables showing the detected radionuclides for each soil sample location is provided in Appendix C.

**Table 12. Soil Sample from 618-10-1 (South Middle Section), with a Slightly Elevated Plutonium Value.**

**618-10-1 Test Pit South Middle**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)[a] | |
|---|---|---|---|---|
| **Analyte** | **Result (pCi/g)** | **MDA (pCi/g)** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross alpha | 7.99 | 3.82 | NA | NA |
| Gross beta | 19 | 8.07 | NA | NA |
| Carbon-14 | 1.43 | 0.707 | 8.7 | NA |
| Uranium-233/234 | 0.576 | 0.245 | 27.2 | 17.9 |
| Uranium-238 | 0.64 | 0.245 | 26.2 | 17.3 |
| Plutonium-239/240 | 1.34 | 0.381 | 35.1 | NA |
| Potassium-40 | 11.9 | 0.236 | NA | NA |
| Cesium-137 | 0.037 | 0.024 | 6.2 | NA |
| Radium-226 | 0.406 | 0.045 | NA | NA |
| Radium-228 | 0.535 | 0.096 | NA | NA |
| Thorium-228 | 0.558 | 0.031 | NA | NA |
| Thorium-232 | 0.535 | 0.096 | 1 | NA |
| Americium-241 | 0.107 | 0.032 | 32.1 | NA |
| Lead-212 GEA | 0.212 | 0.075 | NA | NA |
| Radiuim-226 GEA | 0.199 | 0.047 | NA | NA |
| Thorium-232 GEA | 0.202 | 0.04 | 1 | NA |
| Uranium-238 GEA | 0.283 | 0.42 | 26.2 | 17.3 |

[a] DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

GEA = gamma energy analysis
GW = groundwater
MDA = minimum detectable activity
NA = not applicable

**Table 13. Soil Sample from 618-10-1 (North Middle Section), with a Slightly Elevated Plutonium Value.**

**618-10-1 Test Pit North Middle Section**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)[a] | |
|---|---|---|---|---|
| **Analyte** | **Result (pCi/g)** | **MDA (pCi/g)** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross alpha | 1.13 | 0.4 | NA | NA |
| Gross beta | 2.15 | 0.644 | NA | NA |
| Carbon-14 | 1.35 | 0.722 | 8.7 | NA |
| Uranium-233/234 | 0.68 | 0.168 | 27.2 | 17.9 |
| Uranium-238 | 0.592 | 0.168 | 26.2 | 17.3 |
| Plutonium-239/240 | 1.92 | 0.262 | 35.1 | NA |
| Potassium-40 | 12 | 0.16 | NA | NA |
| Radium-226 | 0.356 | 0.038 | NA | NA |
| Radium-228 | 0.574 | 0.077 | NA | NA |
| Thorium-228 | 0.556 | 0.027 | NA | NA |
| Thorium-232 | 0.574 | 0.077 | 1 | NA |
| Americium-241 | 0.192 | 0.116 | 32.1 | NA |
| Lead -212 GEA | 0.178 | 0.069 | NA | NA |
| Radiuim-226 GEA | 0.176 | 0.045 | NA | NA |
| Thorium-232 GEA | 0.158 | 0.053 | 1 | NA |

[a] DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

GEA = gamma energy analysis
GW = groundwater
MDA = minimum detectable activity
NA = not applicable

**Table 14. Soil Sample from 618-10-20 (Grid #3 Section), with a Slightly Elevated Plutonium Value.**

**618-10-20 Test Pit Grid #3**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)[a] | |
|---|---|---|---|---|
| **Analyte** | **Result (pCi/g)** | **MDA (pCi/g)** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.841 | 0.774 | 8.7 | NA |
| Uranium-233/234 | 0.658 | 0.18 | 27.2 | 17.9 |
| Uranium-238 | 0.24 | 0.18 | 26.2 | 17.3 |
| Plutonium-239/240 | 3.09 | 0.296 | 35.1 | NA |
| Potassium-40 | 10.8 | 0.192 | NA | NA |
| Radium-226 | 0.389 | 0.042 | NA | NA |
| Radium-228 | 0.553 | 0.11 | NA | NA |
| Thorium-228 | 0.549 | 0.028 | 2.3 | NA |
| Thorium-232 | 0.553 | 0.11 | 1 | NA |
| Radiuim-226 GEA | 0.134 | 0.051 | NA | NA |
| Thorium-232 GEA | 0.19 | 0.064 | 1 | NA |
| Amercium-241 GEA | 0.0365 | 0.055 | 32.1 | 32.1 |

[a] DOE/RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

GEA = gamma energy analysis
GW = groundwater
MDA = minimum detectable activity
NA = not applicable

# 9.0 LESSONS LEARNED

Lessons learned from the intrusive characterization include findings for both operational/process methods and added understanding with respect to the burial ground trench layout and contents. Lessons learned are summarized in the following sections.

## 9.1 BURIAL GROUND CONTENT AND CONDITION

As a result of the intrusive characterization activities, the presence of expected waste streams was confirmed (see Sections 7.0 and 8.0). The expected waste streams included the following:

- Drums containing depleted uranium chips in oil
- Drums containing uranium oxide
- Concreted drums.

Although some of the expected waste streams were identified, the diminished level of contamination observed in the soil laboratory results and the lower dose rates identified in the

concreted drum NDA results are surprising. No contamination levels above the RDR/RAWP cleanup levels were identified in the soils, and no TRU (plutonium) radionuclides were identified in the concreted drums.
A better understanding of the burial ground conditions was achieved as a result of the observations made during field activities. Some of these observations include:

- The individual burial trench locations were not easily identified. Because of the sandy material where the original burial trenches were excavated and the materials used to backfill the trenches, the trench boundaries seem to run together. It is difficult to distinguish one trench from another.

- The magnetic signature from the geophysical surveys was initially the best indication for determining areas where drums and metal anomalies might be located. However, the geophysical data proved to be a poor indicator of drum locations and yielded minimal results. The hog wire fencing is likely manifested in the magnetic patterns shown over 618-10-13 and other places (see Section 6.3).

- The sand used to stabilize the burial ground trenches has shifted over time. A build up of sand was noted on the northeastern corner of the site and in other areas the sand covering may have worn thin with several years of blowing wind resulting in redistribution of the sand covering.

- Layers of gravel were used to stabilize the surface and trench contents after filling (see photograph in Figure 19). Distinguishable layers of gravel and cobbles were indentified throughout the site.

## 9.2 OPERATIONAL METHODOLOGIES

One of the objectives of the intrusive characterization was to demonstrate methodologies and material handling processes to be used during the remediation phase. During field activities the means and methods planned for remediation were confirmed. The planned methods, including the continuous use application of Dust Bond® during test pitting activities, successfully controlled the radiological contamination. Some the Lessons Learned identified in the operational process include the following:

- The diminished use of the CRATER™ system during remediation activities. The CRATER™ system will not be used to screen through bulk materials and soil, and will be used to screen/monitor discrete items at the discretion of the project engineer or resident engineer (or designee) (see Section 6.1).

- The difficulty of balancing the needs and requirements of general IH, beryllium, and radiological controls is difficult. The sampling needs vary between the three, and the protocols are significantly different. A balanced and coordinated sampling program for conducting work and environmental safety is needed. In addition, coordinated controls and a simplified process where hazards and complex controls are made clear for the workers performing the tasks are needed.

- An official agreement between radiological controls and IH needs to be reached on how concurrent areas are to be posted. The agreement should allow both organizations to share

ropes/posts and allow dual signage. Any change in posting must be done in congress and make sense to those performing work in the field and accessing controlled boundaries.

- The numerous waste container paperwork requirements must be integrated and streamlined in order to handle the volume for containers that will be needed during remediation. In addition, waste containers should be labeled with large information/barcode labels for easy identification.

## 10.0 REFERENCES

0600X-DD-C0487, 2010, "618-10 Remedial Action Intrusive Characterization Operational Site Plan," Rev. 2, Washington Closure Hanford, Richland, Washington.

10 CFR 830, "Nuclear Safety Management," *Code of Federal Regulations*, as amended.

618-10-FPE-001, 2010, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Washington Closure Hanford, Richland, Washington.

BHI-00291,1997, *Geophysical Investigations of the 618-10 and 618-11 Burial Grounds, 300-FF-2 Operable Unit*, Rev. 1, Bechtel Hanford, Inc., Richland, Washington.

CCN 149393, 2010, "Industrial Hygiene Exposure Assessment," CCN 149393, prepared by R. Ganapathy, Washington Closure Hanford, Richland, Washington, March 9.

CCN 150527, 2010, "Report on the 618-10 Burial Ground Evaluation of Waste Hazards, Rev. 0," CCN 150527, to J. W. Darby from M. J. Haas, Washington Closure Hanford, Richland, Washington, April 6.

CCN 153714, 2010, "Geologic Description for Test Pit at 618-10," CCN 150527, to J. D. Ludowise from W. S. Thompson, Washington Closure Hanford, Richland, Washington, September 23.

CCN 153759, 2010, "Results of Nondestructive Assay (NDA) Measurements of Four Drums Performed on August 23-24, 2010 by Pacific Northwest National Laboratory (PNNL) NDA Service Center," CCN 153759, to J. D. Ludowise, Washington Closure Hanford, from A. Mozhayev, Pacific Northwest National Laboratory, Richland, Washington, September 14.

DOE/RL-2001-47, 2009, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2008-27, 2009, *Sampling and Analysis Plan for 618-10 and 618-11 Nonintrusive Sampling*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2009-64, 2010, *Sampling and Analysis Plan for Intrusive Characterization of 618-10 Burial Ground Trenches*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE-STD-1027-92, 1992, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, U.S. Department of Energy, Washington, D.C.

EL-1648, 2010, *618-10 and 618-11 Nonintrusive, Intrusive and Remediation Sampling,* Logbook, Washington Closure Hanford, Richland, Washington.

GI 0602202, 2009, *Geophysical Site Investigation Summary, 618-10 Burial Ground Geophysical Summary Focusing on Metal Concentrations*, Washington Closure Hanford, Richland, Washington.

H-3-9982, 1962, Layout of the 618-10 Burial Ground (aka 300 North Burial Ground; 318-10), U.S. Atomic Energy Commission, Richland, Washington.

IHE-2009-0006, 2010, Integrated Chemical and Radiological Hazard Evaluation Worksheet – 618-10 Burial Ground/North Burial Ground, Rev. 2, Washington Closure Hanford, Richland, Washington.

SH-1, *Safety and Health*, SH-1-5.7, "Fire Protection Design/Operations Criteria," Washington Closure Hanford, Richland, Washington.

WCH-357, 2010, *Field Investigation Plan for the 618-10 Burial Ground Intrusive Sampling*, Rev. 0, Washington Closure Hanford, Richland, Washington.

WCH-390, 2010, *Final Hazard Categorization for the 618-10 Burial Ground Intrusive Characterization,* Rev. 1, Washington Closure Hanford, Richland, Washington.

# APPENDIX A

# AUTHORIZATION BASIS AND FIRE PROTECTION REQUIREMENTS

**Table A-1. 618-10 Burial Ground Intrusive Characterization Authorization Basis Requirements. (2 Pages)**

| ABFD Ref. No. [a] | Safety Analysis Document [b] | Requirement | Work Implementing Instruction [c] |
|---|---|---|---|
| | | **SER Conditions of Approval** | |
| AB-1 | DOE Safety Evaluation Report, Condition of Approval 618-10-10SED0115-2. | Separation distances required between inventory control areas, and the bases for the distances shall be conservatively developed to include a 2X factor of safety based on an analysis approved by the WCH fire protection engineer and shall be included under Commitment Seven in Section 3.2 of the FHC. | Layout of inventory control areas specified in Drawing 0600X-DD-C0487, Rev. 2. |
| | | **FHC Preservation Controls** | |
| AB-2 | WCH-390, FHC, Section 3.2.2. | The 618-10 Burial Ground SNF inventory shall be controlled to ensure that the inventory of exposed suspect SNF is maintained less than 647.7 cm (255 in.). | FRC-100-2.1, "AB Compliance for Radiological Facilities," Section 6.2, 6.4 and 6.5.<br><br>FR6 10 03 17 010, "Excavation and Sorting," Section 2.2. |
| AB-3 | WCH-390, FHC, Section 3.2.3. | The radiological inventory in a given SNF accumulation area at the 618-10 Burial Ground shall be controlled to ensure that the inventory does not exceed 152.4 cm (60 in.) of exposed suspect SNF. | FRC-100-2.1, "AB Compliance for Radiological Facilities," Section 6.2, 6.4 and 6.5.<br><br>FR6 10 03 17 010, "Excavation and Sorting," Section 2.2. |
| AB-4 | WCH-390, FHC, Section 3.2.4. | The requirements for the SNF staging areas design are as follows:<br>• SNF staging areas shall be constructed to afford equivalent shielding and fire resistance as 60 cm (2 ft) of concrete<br>• SNF staging areas shall have a noncombustible cover<br>• SNF staging areas shall be bermed to provide protection against potential fuel spills from heavy equipment and vehicles. | CCN 149995, "618-10 Burial Ground Trench Remediation Safeguards and Security (SAS) Requirements."<br><br>SNF Staging Area (SSNF Bunker) layout shown in Drawing 0600X-DD-C0487 Rev. 2. |
| AB-5 | WCH-390, FHC, Section 3.2.5. | The radiological inventory in a given container staging area at the 618-10 Burial Ground shall be controlled to ensure that the inventory does not exceed 65 drums. | FRC-100-2.1, "AB Compliance for Radiological Facilities," Sections 6.2 and 6.4.<br><br>FR6 10 03 17 010, "Excavation and Sorting," Section 2.2. |

**Table A-1. 618-10 Burial Ground Intrusive Characterization Authorization Basis Requirements. (2 Pages)**

| ABFD Ref. No. [a] | Safety Analysis Document [b] | Requirement | Work Implementing Instruction [c] |
|---|---|---|---|
| AB-6 | WCH-390, FHC, Section 3.2.6. | The excavation limit for a given test pitting area at the 618-10 Burial Ground shall be controlled to limit a given excavation to ≤110 $m^3$ (144 $yd^3$). | FR6 10 03 17 010, "Excavation and Sorting," Section 2.2. |
| AB-7 | WCH-390, FHC, Section 3.2.7. | The separation distance between areas designated as inventory control areas (i.e., <HC-3) shall be maintained in accordance with analyses approved by the WCH Fire Protection Engineer. | Layout of inventory control areas specified in Drawing 0600X-DD-C0487, Rev. 2. |

[a] Numbers are used for tracking requirements implementation in WCH Task Instructions.

[b] Detailed reference information for safety analysis documents:

- CCN 151674, June 2010, *Safety Evaluation Report: 618-10 Burial Grounds Intrusive Characterization Final Hazards Categorization*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- WCH-390, 2010, *Final Hazard Categorization for the 618-10 Burial Ground Intrusive Characterization,* Rev. 1, Washington Closure Hanford, Richland, Washington.

[c] Detailed reference information for work implementing documents:

- 0600X-DD-C0487, 2010, "618-10 Remedial Action Intrusive Characterization Operational Site Plan," Rev. 2, Washington Closure Hanford, Richland, Washington.
- CCN 149995, 2009, "618-10 Burial Ground Trench Remediation Safeguards and Security (SAS) Requirements," to J.W. Darby from T.S. Quinn, Washington Closure Hanford, Richland, Washington, April 7.
- FR6 10 03 17 010, WCH Task Instruction, "Excavation and Sorting," Rev. 0, Washington Closure Hanford, Richland, Washington.
- FRC-100-2.1, *FRC-100, Field Remediation Closure Administrative Procedures*, "AB Compliance for Radiological Facilities," Rev.1, Washington Closure Hanford, Richland, Washington.

AB = Authorization Basis
ABFD = Authorization Basis Flow Down
FHC = *Final Hazard Categorization for the 618-10 Burial Ground Intrusive Characterization*
HC = hazard category
SER = safety evaluation report
SNF = spent nuclear fuel
SSNF = suspect spent nuclear fuel
WHC = Washington Closure Hanford

## Table A-2. Fire Protection Requirements for the 618-10 Burial Ground Intrusive Characterization. (5 Pages)

| FPE Requirement | Requirement | Implementing Document |
|---|---|---|
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Open trenches containing exposed waste and structures used for storing or staging of waste containers shall have accumulated tumbleweeds removed and covered with soil or mixed with soil as soon as feasible. Inspection of these areas should be performed at regular intervals and after windstorms. Nonessential combustible material must be promptly removed. | WCH Work Package, FR6 10 03 17 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Open trenches containing exposed waste shall have accumulated tumbleweeds removed and covered with soil or mixed with soil prior to initiating intrusive characterization activities involving a loader or other fossil-fueled vehicle. | WCH Work Package, FR6 10 03 17 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | As part of wild land fire prevention and mitigation, establish vegetation control within the fenced area and maintain an area clear of vegetation a minimum of 10 m (30 ft) from all open trenches, waste staging areas, operations areas, and facilities. | WCH Work Package, FR6 10 03 17 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Prohibit smoking within 15 m (50 ft) of hazardous operations or flammable/combustible materials. | Field Remediation HASP |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Prohibit fuel-fired portable heaters within 15 m (50 ft) of operations and staging areas unless approved by the WCH Fire Protection Engineer. | WCH Craft Work Package, FR6 10 03 24 012, "Precautions and Limitations," Rev. 7 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Separate portable generators (to support electrical equipment, light posts, etc.) from nonhazardous combustible materials a minimum of 10 m (30 ft) and a minimum of 15 m (50 ft) from hazardous or radioactive materials. For equipment (such as air monitors that must be operated adjacent to open excavations, or radioactive material) and for which it is not practicable to operate with long extension cords, portable generators shall be separated as far as practicable from hazardous or radioactive sources. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Comply with the applicable National Fire Protection Association (NFPA) requirements (e.g., NFPA 1 and NFPA 30) for the storage, staging, and treatment of materials. | WCH Procedure SH-1-5.9, "Flammable and Combustible Liquids," Rev. 1, Section 6.1, Requirements |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Ensure equipment is not fueled or serviced while running. | WCH Craft Work Package, FR6 10 03 24 012, "Precautions and Limitations," Rev. 7 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Ensure that excavation equipment is fueled outside the excavation pit and at least 15 m (50 ft) from exposed hazardous or radioactive materials, other than those that may be attached to the equipment being refueled (e.g., contaminated excavator bucket). | WCH Work Package, FR6 10 03 17 010, "Excavation and Sorting," Rev. 0<br><br>WCH Work Package, FR6 10 03 24 012, "Equipment Maintenance," Rev. 0 |

## Table A-2. Fire Protection Requirements for the 618-10 Burial Ground Intrusive Characterization. (5 Pages)

| FPE Requirement | Requirement | Implementing Document |
|---|---|---|
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Ensure any refueling of ancillary fossil-fueled equipment (e.g., gasoline, diesel, propane) is performed outside of the excavation pit and at least 15 m (50 ft) from exposed hazardous or radioactive materials, other than those that may be attached to the equipment being refueled (e.g., contaminated telehandler). | WCH Work Package, FR6 10 03 17 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | For fixed location fueling stations, provide ground slope or diking to prevent spilled liquids from migrating any closer than 15 m (50 ft) to hazardous or radioactive materials. | Not applicable to 618-10 intrusive characterization |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Unless approved by the WCH Fire Protection Engineer, hot work activities are performed outside of an excavation. | WCH Craft Work Package, FR6 10 03 24 012, "Precautions and Limitations," Rev. 7 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Unless approved by the WCH Fire Protection Engineer, utilize FM Global-specified less flammable hydraulic fluids in the excavator equipment. | WCH Task Instruction, FR6 10 03 17 010, "Excavating and Sorting," Rev. 0<br><br>Supervisor's Daily Check List |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Prior to operating excavation equipment in the pit, complete a daily equipment check for fuel and hydraulic fluid leaks. Any equipment identified as having a leak should be removed from these areas for repair. | WCH Task Instruction, FR6 10 03 17 010, "Excavating and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | The project shall require site-specific "lid projectile" coverage in training for workers inside the project boundary fence (which approximates the 200-ft (61-m) worst-case lid loss event shown in DOE-STD-5506-2007. Specific worker training must discuss the likelihood, controls in place, and consequences of an overpressure event in a drum causing a lid loss/projectile event (prior to initial overpack) and the directional nature of a projectile before and after overpack installation at the excavation face and when in transit and storage (prior to venting). Of particular note is the 15-m (50-ft) exclusion area in place prior to inserting the waste drum into a salvage container and the "aiming" of any projectile after placement in the salvage drum. | WCH Craft Work Package, FR6 10 03 24 012, "Precautions and Limitations," Rev. 7 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | When drums and containers that are suspected of containing unknown, shock-sensitive, flammable, or explosive wastes are handled, the material handling equipment shall be provided with one or more of the following measures: blast-resistant windows, explosive containment devices, or protective shields, in accordance with 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," to protect equipment operators from exploding containers, or energetic container releases. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Excavator operators shall be trained to use available side-slope soil to extinguish incipient stage fire. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |

## Table A-2. Fire Protection Requirements for the 618-10 Burial Ground Intrusive Characterization. (5 Pages)

| FPE Requirement | Requirement | Implementing Document |
|---|---|---|
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | When handling waste containers that have not been characterized:<br>• All nonessential personnel shall be evacuated from the area (e.g., exclusion zone) when the waste container is being handled<br>• Continuous communications shall be maintained between the operator, the site superintendent, the site Health and Safety Officer, and the subcontractor technical representative until such time as the handling operation is completed<br>• A means of employee notification shall be used to signal the commencement and completion of waste handling activities. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | During test pitting activities, the potential exists for encountering soil mixed with, or containers of, flammable or combustible liquids. To address this concern the following is proposed:<br>• Perform periodic field monitoring with combustible gas indicators at excavation operations. If combustible concentrations are identified in excess of 25% of the lower flammable limit, then activities must be halted and reevaluated to determine a safe path forward.<br>• Follow safe practices during the performance of any task that might create a flammable/explosive atmosphere. This includes minimizing potential ignition sources away from operations and staging areas. Periodically monitor areas in accordance with the excavation integrated work control package to ensure the atmosphere remains below stated action levels. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Fixative materials used for stabilizing loose soils and contamination shall be composed of noncombustible materials. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | To address both the potential hazards and the need for personnel egress and vehicle ingress/egress, ensure egress paths, gates, and roads remain clear and unobstructed. Further, permit only essential vehicles around operations and staging areas. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | When drummed waste, particularly containing pyrophoric material and/or radioactive material is encountered and identified for characterization, the work instructions will detail the methods for characterizing, sampling, handling, removing, staging, and disposing of the container. Removal of intact drums or sealed containers from the excavation face will be accomplished in such a way as to maintain the container integrity, including full bottom support. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |

## Table A-2. Fire Protection Requirements for the 618-10 Burial Ground Intrusive Characterization. (5 Pages)

| FPE Requirement | Requirement | Implementing Document |
|---|---|---|
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | The following controls are proposed for the drum storage areas:<br>• Group a maximum of four items (e.g., four drums) in a single storage area.<br>• Separate multiple storage areas by space 7.6 m (25 ft) or 0.61 m (2 ft) concrete barriers (ecology blocks) that are full height of item<br>• Cover the unstabilized items with a 416.4-L (110-gal) drum or other noncombustible material<br>• Berm the storage areas to prevent fuel spills from heavy equipment from entering the area. | Separation distance is covered in Drawing 0600X-DD-C0487, Rev. 2;<br><br>WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | When transporting such material, the following controls shall apply:<br>• A front-end loader or equivalent (fire response) shall be standing by when material is in transit<br>• Clean fill dirt or sand shall be staged for fire response. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0;<br><br>Supervisor's Daily Check List |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | When sampling of drums containing unknown, shock-sensitive, flammable, or explosive waste materials, is performed using the drum punch station, personnel must be protected by distance and or protective shields during the sampling process until the project technical review team determines the object is safe to approach. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | The following controls are proposed for SSNF/SNF staging areas:<br>• The radiological inventory in a given SSNF/SNF staging area at the 618-10 Burial Ground shall be controlled to ensure that the inventory does not exceed 152.4 cm (60 in.) of SSNF/SNF<br>• SSNF/SNF staging areas shall be separated from other areas by 0.61-m (2-ft)-thick concrete barriers (see Appendix B) that are full height of item<br>• SSNF/SNF staging areas shall have a noncombustible cover<br>• SSNF/SNF staging areas shall be bermed to provide protection against potential fuel spills from heavy equipment and vehicles. | FRC-100-2.1, "AB Compliance for Radiological Facilities," Rev.1, Section 6.2, 6.4, and 6.5<br><br>WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0<br><br>CCN 149995, "618-10 Burial Ground Trench Remediation Safeguards and Security (SAS) Requirements"<br><br>SNF Staging Area (SSNF Bunker) layout shown in WCH Drawing 0600X-DD-C0487, Rev. 1 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Temporary structures/enclosures/support facilities shall comply with DOE-STD-1088-95, Fire Protection for Relocatable Structures (DOE 1995), and the *International Building Code* (ICC 2009). Approval for use of these facilities will be obtained through the in-place Hanford Fire Marshal Permitting process with review from the WCH Fire Protection Engineer prior to use. | 618-10 Mobile Office Occupancy Permits |

## Table A-2. Fire Protection Requirements for the 618-10 Burial Ground Intrusive Characterization. (5 Pages)

| FPE Requirement | Requirement | Implementing Document |
|---|---|---|
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Ensure that any plastic sheeting required in operations or staging areas (other than container lines and tarps) complies with test method 2 of the *Standard Method of Fire Test for Flame Propagation of Textiles and Films* (NFPA 701). | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Pallets used for staging of waste containers shall be noncombustible. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Minimize the exposed surface area of contaminated combustible materials during excavation, sorting, and staging processes. At the end of shift and/or overnight, all exposed surface areas of contaminated combustible materials must be covered with processed soil or other contractor-approved methods to preclude combustion or movement of materials outside of controlled boundaries. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Ensure that flammable/combustible liquids, flammable gases, or other general combustible materials, which require staging as radioactive (but not high radiation) materials, be located at least 15 m (50 ft) from other combustible materials. If this combustible staging area has the potential for liquids, provide a berm to contain the maximum possible spill volume. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Prohibit the storage of combustible materials in the SSNF bunker. If necessary, establish a separate area for high radiation combustibles. | WCH Work Package, FR6 10 03 17 011, "618-10 Burial Ground Drum/Anomaly Characterization," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Prior to starting work, facilitate the update of the Hanford Fire Department pre-incident plans. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |
| 618-10-FPE-001, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Section 4.0 | Consistent with site practice and training, the Hanford Fire Department will be notified of all observed fires, flash, smoke, and deflagration events. | WCH Work Package, FR6 10 03 24 010, "Excavation and Sorting," Rev. 0 |

Detailed reference information for sources:


- 0600X-DD-C0487, 2010, "618-10 Remedial Action Intrusive Characterization Operational Site Plan," Rev. 2, Washington Closure Hanford, Richland, Washington.
- 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response," *Code of Federal Regulations*, as amended.
- 618-10-FPE-001, 2010, *Fire Protection Evaluation of 618-10 Burial Ground Intrusive Characterization Activities*, Rev. 0, Washington Closure Hanford, Richland, Washington.
- CCN 149995, 2009, "618-10 Burial Ground Trench Remediation Safeguards and Security (SAS) Requirements," to J. W. Darby from T. S. Quinn, Washington Closure Hanford, Richland, Washington, April 7.
- DOE-STD-5506-2007, 2007, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*, U.S. Department of Energy, Washington, D.C.
- DOE-STD-1088-95, 1995, *Fire Protection for Relocatable Structures*,
- FR6 10 03 17 010, WCH Task Instruction, "Excavating and Sorting," Rev. 0, Washington Closure Hanford, Richland, Washington.
- FR6 10 03 24 010, WCH Work Package, "Excavation and Sorting," Rev. 0, Washington Closure Hanford, Richland, Washington.
- FR6 10 03 24 012, WCH Work Package, "Equipment Maintenance," Rev. 0, Washington Closure Hanford, Richland, Washington.
- FR6 10 03 24 012, WCH Craft Work Package, "Precautions and Limitations," Rev. 0, Washington Closure Hanford, Richland, Washington.
- FRC-100-2.1, FRC-100, *Field Remediation Closure Administrative Procedures*, "AB Compliance for Radiological Facilities," Rev.1, Washington Closure Hanford, Richland, Washington.
- ICC, 2009, *International Building Code*, International Code Council, Washington, D.C.
- NFPA 701, 2010, *Standard Method of Fire Test for Flame Propagation of Textiles and Films*, National Fire Protection Association, Washington, D.C.
- SH-1, *Safety and* Health, Procedure SH-1-5.9, "Flammable and Combustible Liquids," Section 6.1, Requirements, Washington Closure Hanford, Richland, Washington.


HASP = health and safety plan
SNF = spent nuclear fuel
SSNF = suspect spent nuclear fuel
WCH = Washington Closure Hanford

# APPENDIX B

# LABORATORY DATA RESULTS

# APPENDIX B

## LABORATORY DATA RESULTS TABLE OF CONTENTS

618-10-1 Test Pit ..... B-1
618-10-2 Test Pit ..... B-73
618-10-8 Test Pit ..... B-145
618-10-13 Test Pit ..... B-227
618-10-20 Test Pit ..... B-313
Sample of Soil Near Uranium Drum IC-001 (J1C0X6) ..... B-393
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# LABORATORY DATA RESULTS

## 618-10-1 TEST PIT

# 618-10-1 Surge Pit Radionuclide Analytical Results
# Sample: J19XC9, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2177

7870-001 J19XC9

DATA SHEET

| | | | | |
|---|---|---|---|---|
| SDG | 7870 | Client/Case no | Hanford | SDG K2177 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | |
| Lab sample id | S008088-01 | Client sample id | J19XC9 | |
| Dept sample id | 7870-001 | Location/Matrix | 618-10-1 Surge Pit Soil | SOLID |
| Received | 08/10/10 | Collected/Weight | 08/05/10 08:10 | 1293 g |
| % solids | 94.9 | Custody/SAF No | RC-154-013 | RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.227 | 2.0 | 3.46 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.14 | 0.48 | 0.784 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.208 | 0.30 | 0.433 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.144 | 0.17 | 0.220 | 1.00 | U | U |
| Uranium 235 | 15117-96-1 | 0 | 0.070 | 0.267 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.144 | 0.12 | 0.220 | 1.00 | U | U |
| Plutonium 238 | 13981-16-3 | 0.076 | 0.15 | 0.290 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.227 | 0.15 | 0.290 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.6 | 1.8 | 2.00 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.168 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 1.03 | 0.11 | 0.142 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 96.7 | 0.58 | 0.312 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.743 | 0.45 | 0.616 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.388 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.533 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.371 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.674 | 0.14 | 0.206 | | | GAM |
| Thorium 232 | TH-232 | 0.743 | 0.45 | 0.616 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.884 | | U | GAM |
| Uranium 238 | U-238 | U | | 18.3 | | U | GAM |
| Americium 241 | 14596-10-2 | 8.27 | 0.29 | 0.360 | | | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

**DATA SHEETS**
Page 1
**SUMMARY DATA SECTION**
Page 11

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 08/28/10 |

## Sample: J1C057, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2180**

7871-001 J1C057

**D A T A  S H E E T**

| | | | | |
|---|---|---|---|---|
| SDG | 7871 | Client/Case no | Hanford | SDG K2180 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | |
| Lab sample id | S008102-01 | Client sample id | J1C057 | |
| Dept sample id | 7871-001 | Location/Matrix | 618-10-1 & 8 Surge Pit | SOLID |
| Received | 08/11/10 | Collected/Weight | 08/09/10 08:40 | 1233 g |
| % solids | 96.0 | Custody/SAF No | RC-154-016 | RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 1.35 | 1.7 | 2.81 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.517 | 0.38 | 0.621 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | -0.006 | 0.16 | 0.424 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.085 | 0.11 | 0.216 | 1.00 | U | U |
| Uranium 235 | 15117-96-1 | 0.068 | 0.069 | 0.262 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.085 | 0.11 | 0.216 | 1.00 | U | U |
| Plutonium 238 | 13981-16-3 | 0.034 | 0.14 | 0.324 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.101 | 0.14 | 0.259 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.3 | 0.56 | 0.265 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.024 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.021 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.392 | 0.047 | 0.044 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.585 | 0.098 | 0.089 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.049 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.074 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.064 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.539 | 0.030 | 0.026 | | | GAM |
| Thorium 232 | TH-232 | 0.585 | 0.098 | 0.089 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.121 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.91 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.036 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

**DATA SHEETS**
Page 1
**SUMMARY DATA SECTION**
Page 11

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 08/26/10 |

# 618-10-1 Surge Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J19XC9, GEA

Apex™

8/7/2010 12:52:58PM Page 1 of 4

Analysis Report for RCF25206

J19XC9 SAF-RC-154 FF2/618-10/11 SOIL IN PROCESS

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25206 |
| Sample Description | : J19XC9 SAF-RC-154 FF2/618-10/11 SOIL IN PROCESS |
| Sample Type | : 50g pillbox |
| Sample Size | : 5.800E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/5/2010 8:30:00AM |
| Acquisition Started | : 8/7/2010 11:52:45AM |
| Procedure | : 50 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : 50 ml Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.2 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE 50gPB 032610Cal 80398-238 |
| Sample Number | : 5074 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 1.000 | 1.22E+01 | 2.81E+00 | |
| PB-212 | | 0.710 | 8.52E-01 | 1.41E-01 | |
| RA-226d | @ | 0.340 | 3.86E-01 | 1.35E-01 | |
| TH-232d | | 0.438 | 4.67E-01 | 1.54E-01 | |

## Sample: J1C057, GEA

Apex™

8/9/2010 4:49:59PM Page 1 of 4

Analysis Report for RCF25235
J1C057 SAF:RC-154 618-10-1 SURGE PIT SOIL PILE

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25235 |
| Sample Description | : J1C057 SAF:RC-154 618-10-1 SURGE PIT SOIL PILE |
| Sample Type | : 80g pillbox |
| Sample Size | : 6.000E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/9/2010 8:40:00AM |
| Acquisition Started | : 8/9/2010 3:49:42PM |
| Procedure | : 80 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : 80 Gram Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.5 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/12/2010 |
| Efficiency Calibration Description | : PGTWHITE 80g PB 031210 EffCal SN80399A-238 |
| Sample Number | : 5160 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.991 | 1.41E+01 | 3.02E+00 | |
| RA-226d | @ | 0.350 | 4.49E-01 | 1.47E-01 | |
| TH-232d | | 0.428 | 4.91E-01 | 1.51E-01 | |

# 618-10-1 Surge Pit Chemical Analytical Results
# Sample: J19XC9, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/27/2010 17:18 |

**J19XC9**
**1008083-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,1-Dichloroethane | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,1-Dichloroethene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,2-Dichloroethane | 6.08 U | 6.08 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 1,2-Dichloropropane | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 2-Butanone | 12.2 U | 12.2 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 2-Hexanone | 12.2 U | 12.2 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.2 U | 12.2 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| **Acetone** | **9.29 J** | 12.2 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Benzene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Bromodichloromethane | 6.08 U | 6.08 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Bromoform | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Bromomethane | 10.1 U | 10.1 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Carbon Disulfide | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Carbon Tetrachloride | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Chlorobenzene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Chloroethane | 10.1 U | 10.1 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Chloroform | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Chloromethane | 10.1 U | 10.1 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Dibromochloromethane | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Ethylbenzene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Methylene Chloride | 6.08 U | 6.08 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Styrene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Tetrachloroethene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Toluene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Trichloroethene | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Vinyl chloride | 10.1 U | 10.1 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| Xylenes, total | 5.07 U | 5.07 | ug/kg dry | 1 | L008292 | 08/11/2010 | 08/11/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *96 %* | *63-151* | | | *L008292* | *08/11/2010* | *08/11/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *101 %* | *68-140* | | | *L008292* | *08/11/2010* | *08/11/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *131 % ** | *66-122* | | | *L008292* | *08/11/2010* | *08/11/2010* | *8260B* |

## Sample: J1C057, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2180<br>Project Manager: Joan Kessner | Reported:<br>08/27/2010 21:40 |

**J1C057**
**1008092-01 (Soil)**

**Lionville Laboratory**

**Volatile Organic Compounds by SW846 8260B**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1-Dichloroethane | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1-Dichloroethene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloroethane | 5.51 U | 5.51 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloropropane | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 2-Butanone | 11.0 U | 11.0 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 2-Hexanone | 11.0 U | 11.0 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.0 U | 11.0 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Acetone | 11.0 U | 11.0 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Benzene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromodichloromethane | 5.51 U | 5.51 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromoform | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromomethane | 9.18 U | 9.18 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Carbon Disulfide | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Carbon Tetrachloride | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chlorobenzene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloroethane | 9.18 U | 9.18 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloroform | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloromethane | 9.18 U | 9.18 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Dibromochloromethane | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Ethylbenzene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Methylene Chloride | 5.51 U | 5.51 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Styrene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Tetrachloroethene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Toluene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Trichloroethene | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Vinyl chloride | 9.18 U | 9.18 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Xylenes, total | 4.59 U | 4.59 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| *Surrogate: 1,2 Dichloroethane-d4* | *95 %* | *63-131* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *99 %* | *68-140* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | *66-122* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |

## Sample: J19XC9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2177<br>Project Manager: Joan Kessner | Reported:<br>08/27/2010 13:33 |

**J19XC9**
**1008083-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 1,2-Dichlorobenzene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 1,3-Dichlorobenzene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 1,4-Dichlorobenzene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,4,5-Trichlorophenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,4,6-Trichlorophenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,4-Dichlorophenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,4-Dimethylphenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,4-Dinitrophenol | 1700 U | 1700 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,4-Dinitrotoluene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2,6-Dinitrotoluene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2-Chloronaphthalene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2-Chlorophenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2-Methylnaphthalene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2-Methylphenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2-Nitroaniline | 1700 U | 1700 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 2-Nitrophenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 680 U | 680 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 3-Nitroaniline | 1700 U | 1700 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4-Chloro-3-methylphenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4-Chloroaniline | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 3- and/or 4-Methylphenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4-Nitroaniline | 1700 U | 1700 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| 4-Nitrophenol | 1700 U | 1700 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Acenaphthene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Acenaphthylene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Anthracene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Benz[a]anthracene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Benzo[a] pyrene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Benzo[b] fluoranthene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Benzo[g,h,i] perylene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Benzo[k] fluoranthene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Bis(2-chloroethyl) ether | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |

## Sample: J19XC9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/27/2010 13:33 |

**J19XC9**
**1008083-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Carbazole | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Chrysene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Dibenz[a,h]anthracene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Dibenzofuran | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Diethyl Phthalate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Dimethyl Phthalate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Di-n-butyl Phthalate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Di-n-octyl Phthalate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Fluoranthene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Fluorene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Hexachlorobenzene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Hexachlorobutadiene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Hexachlorocyclopentadiene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Hexachloroethane | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Isophorone | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Naphthalene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Nitrobenzene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| N-Nitrosodiphenylamine | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Pentachlorophenol | 1700 U | 1700 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Phenanthrene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Phenol | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Pyrene | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| **TIC:Aldol 1** | **89900** A, B, J | | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| **TIC:Alkane 1** | **197** J | | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| **TIC:Alkane 2** | **261** B, J | | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| **TIC:Alkane 3** | **171** J | | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| **TIC:Unknown 1** | **1490** B, J | | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| Tributylphosphate | 340 U | 340 | ug/kg dry | 1 | L008091 | 08/10/2010 | 08/26/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | *25-121* | | | *L008091* | *08/10/2010* | *08/26/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *70 %* | *24-113* | | | *L008091* | *08/10/2010* | *08/26/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *71 %* | *23-120* | | | *L008091* | *08/10/2010* | *08/26/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *67 %* | *30-115* | | | *L008091* | *08/10/2010* | *08/26/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *67 %* | *19-122* | | | *L008091* | *08/10/2010* | *08/26/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *87 %* | *18-137* | | | *L008091* | *08/10/2010* | *08/26/2010* | *8270C* |

## Sample: J1C057, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA 99354 | Project Manager: Joan Kessner | 08/25/2010 15:45 |

**J1C057**
**1008092-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,2-Dichlorobenzene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,3-Dichlorobenzene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,4-Dichlorobenzene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4,5-Trichlorophenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4,6-Trichlorophenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dichlorophenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dimethylphenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dinitrophenol | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dinitrotoluene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,6-Dinitrotoluene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Chloronaphthalene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Chlorophenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Methylnaphthalene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Methylphenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Nitrophenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 675 U | 675 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chloro-3-methylphenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chloroaniline | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3- and/or 4-Methylphenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Nitrophenol | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Acenaphthene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Acenaphthylene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Anthracene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benz[a]anthracene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[a] pyrene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[b] fluoranthene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[g,h,i] perylene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[k] fluoranthene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroethyl) ether | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |

## Sample: J1C057, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/25/2010 13:45 |

**J1C057**
**1008092-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Carbazole | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Chrysene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dibenz[a,h]anthracene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dibenzofuran | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Diethyl Phthalate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dimethyl Phthalate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Di-n-butyl Phthalate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Di-n-octyl Phthalate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Fluoranthene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Fluorene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorobenzene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorobutadiene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorocyclopentadiene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachloroethane | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Isophorone | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Naphthalene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Nitrobenzene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| N-Nitrosodiphenylamine | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Pentachlorophenol | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Phenanthrene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Phenol | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Pyrene | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Unknown 1** | **529** B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Alkane 1** | **165** B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 2** | **36000** A, B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 1** | **255** A, B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Tributylphosphate | 337 U | 337 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *64 %* | *25-121* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *66 %* | *24-113* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *62 %* | *23-120* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *73 %* | *30-115* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *61 %* | *19-122* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *109 %* | *18-137* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |

## Sample: J19XC9, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/24/2010 05:45 |

**J19XC9**
**1008083-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L008090 | 08/10/2010 | 08/16/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *86 %* | *43-144* | | | *L008090* | *08/10/2010* | *08/16/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *82 %* | *52-141* | | | *L008090* | *08/10/2010* | *08/16/2010* | *8082* |

## Sample: J1C057, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/24/2010 20:54 |

**Polychlorinated Biphenyls by SW846 8082**
**Lionville Laboratory**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C057 (1008092-01) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *141 %* | *43-144* | | | *L008201* | *08/18/2010* | *08/21/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *139 %* | *52-141* | | | *L008201* | *08/18/2010* | *08/21/2010* | *8082* |
| Aroclor 1016 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |
| Aroclor 1221 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |
| Aroclor 1232 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |
| Aroclor 1242 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |
| Aroclor 1248 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |
| Aroclor 1254 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |
| Aroclor 1260 | 13.3 U | 13.3 | ug/kg dry | 1 | L008201 | 08/18/2010 | 08/21/2010 | 8082 |

## Sample: J19XC9, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/23/2010 10:41 |

**J19XC9**
**1008083-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4920** | | 3.56 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Antimony** | **0.699** | | 0.428 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Arsenic** | **2.53** | | 0.713 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Barium** | **60.4** | | 0.356 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Beryllium** | **0.160** | | 0.143 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Boron** | **0.528** | B | 1.43 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cadmium** | **0.0628** | B | 0.143 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Calcium** | **6010** | | 71.3 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Chromium** | **5.22** | | 0.143 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cobalt** | **7.83** | | 1.43 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Copper** | **10.8** | | 0.713 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Iron** | **22500** | | 14.3 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Lead** | **2.96** | | 0.356 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Magnesium** | **3870** | | 53.4 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Manganese** | **307** | | 3.56 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Molybdenum** | **0.384** | B | 1.43 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Nickel** | **7.04** | | 2.85 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Potassium** | **881** | | 285 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Selenium | 0.214 | U | 0.214 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Silicon** | **417** | | 1.43 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Silver | 0.143 | U | 0.143 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Sodium** | **189** | | 35.6 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Vanadium** | **62.6** | | 1.78 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zinc** | **42.3** | | 7.13 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zirconium** | **22.1** | | 3.56 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Mercury | 0.0250 | U | 0.0250 | mg/kg dry | 1 | L008121 | 08/12/2010 | 08/12/2010 | 7471A |

## Sample: J19XC9, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/23/2010 10:41 |

**J19XC9**
**1008083-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| **Barium** | **0.347** | | 0.00600 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L008177 | 08/17/2010 | 08/20/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L008149 | 08/16/2010 | 08/17/2010 | 7470 |

## Sample: J1C057, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2180<br>Project Manager: Joan Kessner | Reported:<br>08/27/2010 11:10 |

**J1C057**
**1008092-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4480** | | 3.78 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Antimony** | **0.829** | | 0.454 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Arsenic** | **2.27** | | 0.756 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Barium** | **70.2** | | 0.378 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Beryllium** | **0.137** | B | 0.151 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Boron** | **0.693** | B | 1.51 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cadmium** | **0.0711** | B | 0.151 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Calcium** | **7530** | | 75.6 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Chromium** | **3.76** | | 0.151 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cobalt** | **7.71** | | 1.51 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Copper** | **11.2** | | 0.756 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Iron** | **22400** | | 15.1 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Lead** | **3.38** | | 0.378 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Magnesium** | **3820** | | 56.7 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Manganese** | **342** | | 3.78 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Molybdenum** | **0.443** | B | 1.51 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Nickel** | **6.89** | | 3.03 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Potassium** | **927** | | 303 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Selenium | 0.227 | U | 0.227 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Silicon** | **445** | | 1.51 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Silver | 0.151 | U | 0.151 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Sodium** | **235** | | 37.8 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Vanadium** | **67.0** | | 1.89 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zinc** | **42.9** | | 7.56 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zirconium** | **24.6** | | 3.78 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Mercury | 0.0309 | U | 0.0309 | mg/kg dry | 1 | L008214 | 08/19/2010 | 08/20/2010 | 7471A |

## Sample: J1C057, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/27/2010 11:10 |

**J1C057**
**1008092-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| **Barium** | **0.520** | | 0.00600 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | 1008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | 1008279 | 08/25/2010 | 08/26/2010 | 7470 |

## Sample: J19XC9, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 14:25 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J19XC9 (1008083-01) Soil** | | | | | | | | | |
| **%Solids** | 94.8 | | 0.1 | % by Weight | 1 | L008169 | 08/16/2010 | 08/16/2010 | EPA 160.6 |
| Bromide | 2.6 | U | 2.6 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Chloride** | 2940 | D | 261 | mg/kg dry | 100 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Fluoride** | 0.3 | B | 2.6 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate** | 6.1 | | 2.6 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Nitrite | 261 | U | 261 | mg/kg dry | 100 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | 1.9 | B | 2.6 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Sulfate** | 8.5 | | 2.6 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 1.51 | | 0.21 | mg/kg dry | 1 | L008315 | 08/26/2010 | 08/27/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.14 | B | 0.21 | mg/kg dry | 1 | L008232 | 08/22/2010 | 08/22/2010 | SW846 7196A |
| Cyanide | 1.03 | U | 1.03 | mg/kg dry | 1 | L008139 | 08/12/2010 | 08/12/2010 | SW846 9014 |
| **Sulfide, total** | 9.03 | B | 21.1 | mg/kg dry | 1 | L008231 | 08/22/2010 | 08/22/2010 | SW846 9034 |
| **pH** | 7.57 | | 0.10 | pH Units | 1 | L008215 | 08/19/2010 | 08/19/2010 | SW846 9045D |

## Sample: J1C057, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 14:23 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result | Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C057 (1008092-01) Soil** | | | | | | | | | |
| **%Solids** | 97.2 | | 0.1 | % by Weight | 1 | L008169 | 08/16/2010 | 08/16/2010 | EPA 160.6 |
| Bromide | 2.4 | U | 2.4 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Chloride** | 7570 | D | 1190 | mg/kg dry | 500 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Fluoride | 2.4 | U | 2.4 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate** | 14.1 | | 2.4 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Nitrite | 1190 | U | 1190 | mg/kg dry | 500 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.4 | U | 2.4 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Sulfate** | 6.6 | | 2.4 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 2.77 | | 0.19 | mg/kg dry | 1 | L008315 | 08/26/2010 | 08/28/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.19 | B | 0.21 | mg/kg dry | 1 | L008232 | 08/22/2010 | 08/22/2010 | SW846 7196A |
| Cyanide | 1.01 | U | 1.01 | mg/kg dry | 1 | L008139 | 08/12/2010 | 08/12/2010 | SW846 9014 |
| **Sulfide, total** | 10.8 | B | 20.6 | mg/kg dry | 1 | L008231 | 08/22/2010 | 08/22/2010 | SW846 9034 |
| **pH** | 7.21 | | 0.10 | pH Units | 1 | L008298 | 08/25/2010 | 08/25/2010 | SW846 9045D |

## Sample: J19XC9, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2177 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/29/2010 07:52 |

**J19XC9**
**1008083-01 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3460 U | 3460 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/25/2010 | 8015M |
| Motor Oil | 10400 U | 10400 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/25/2010 | 8015M |
| Kerosene | 10400 U | 10400 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/27/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *87 %* | *39-129* | | | *L008165* | *08/17/2010* | *08/25/2010* | *8015M* |

## Sample: J1C057, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/29/2010 07:59 |

**Extractable Petroleum Hydrocarbons by SW846 8015**
**Lionville Laboratory**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C057 (1008092-01) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *90 %* | *39-129* | | | *L008165* | *08/17/2010* | *08/25/2010* | *8015M* |
| Diesel Range Organics | 3410 U | 3410 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/25/2010 | 8015M |
| Motor Oil | 10200 U | 10200 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/25/2010 | 8015M |
| Kerosene | 10200 U | 10200 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/27/2010 | 8015M |
| **J1C058 (1008092-02) Soil** | | | | | | | | |

# 618-10-1 Surge Pit Asbestos
# Sample: J1C062 and J1C063, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 224169 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01035 |
| Date: | 8/16/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5C891AA** | | | | |
| **Client ID** | J1C062' | | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | | | | |
| Homogeneous | Y | | | | |
| Color | brown | | | | |
| % Visible Fibers | TRA | | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | | | | |
| %Amosite | ND | | | | |
| %Crocidolite | ND | | | | |
| %Tremolite | ND | | | | |
| %Actinolite | ND | | | | |
| % Anthophylite | ND | | | | |
| **% Total Asbestos** | **ND** | | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | | | | |
| % Glass Fibers | ND | | | | |
| % Other fibers | ND | | | | |
| % Non-fibrous | 100 | | | | |

***Comments:***

**Note:** "ND" stands for "None Detected", "TRA" stands for "<1%"

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 229181 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01049 |
| Date: | 8/17/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5ERC1AA** | **L5ERQ1AA** | | | |
| **Client ID** | J1C063' | J1C064' | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | | | |
| Homogeneous | Y | Y | | | |
| Color | brown/black | brown/black | | | |
| % Visible Fibers | TRA | 0 | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | | | |
| %Amosite | TRA | ND | | | |
| %Crocidolite | ND | ND | | | |
| %Tremolite | ND | ND | | | |
| %Actinolite | ND | ND | | | |
| % Anthophylite | ND | ND | | | |
| **% Total Asbestos** | **TRA** | **ND** | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | | | |
| % Glass Fibers | ND | ND | | | |
| % Other fibers | ND | ND | | | |
| % Non-fibrous | 100 | 100 | | | |

***Comments:***

**Note:** "ND" stands for "None Detected", "TRA" stands for "<1%"

# 618-10-1 Test Pit Radionuclide Analytical Results
# Sample: J1C093, Radionuclides

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K2199

7082-001 J1C093

DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7082 | Client/Case no | Hanford | SDG K2199 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S008155-01 | Client sample id | J1C093 | | |
| Dept sample id | 7082-001 | Location/Matrix | 618-10-1 Trench Bottom | SOLID | |
| Received | 08/18/10 | Collected/Weight | 08/13/10 09:51 | 2398 g | |
| % solids | 94.4 | Custody/SAF No | RC-154-021 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 10.4 | 4.2 | 3.66 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 14.0 | 4.0 | 5.28 | 15.0 | | 93B |
| Tritium | 10028-17-8 | -0.956 | 1.8 | 3.20 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.43 | 0.47 | 0.752 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.070 | 0.14 | 0.382 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.562 | 0.26 | 0.196 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.031 | 0.062 | 0.237 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.460 | 0.21 | 0.196 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.074 | 0.15 | 0.410 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.260 | 0.22 | 0.284 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.4 | 0.52 | 0.232 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.020 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.107 | 0.024 | 0.025 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.379 | 0.045 | 0.042 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.616 | 0.10 | 0.104 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.044 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.077 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.079 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.550 | 0.028 | 0.024 | | | GAM |
| Thorium 232 | TH-232 | 0.616 | 0.10 | 0.104 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.117 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.54 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.037 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/23/10 |

**DATA SHEETS**
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## Sample: J1C094, Radionuclides

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K2199

7082-002 J1C094

DATA SHEET

| | | | | |
|---|---|---|---|---|
| SDG | 7082 | Client/Case no | Hanford | SDG K2199 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | |
| Lab sample id | S008155-02 | Client sample id | J1C094 | |
| Dept sample id | 7082-002 | Location/Matrix | 618-10-1 Trench Bottom | SOLID |
| Received | 08/18/10 | Collected/Weight | 08/13/10 10:00 | 2493 g |
| % solids | 94.4 | Custody/SAF No | RC-154-021 | RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 1.13 | 0.44 | 0.400 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 2.15 | 0.49 | 0.644 | 15.0 | | 93B |
| Tritium | 10028-17-8 | -0.209 | 1.8 | 3.15 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.35 | 0.45 | 0.722 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.067 | 0.14 | 0.406 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.680 | 0.27 | 0.168 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.106 | 0.11 | 0.203 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.592 | 0.22 | 0.168 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.206 | 0.21 | 0.328 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 1.92 | 0.51 | 0.262 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 12.0 | 0.45 | 0.160 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.019 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.043 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.356 | 0.040 | 0.038 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.574 | 0.087 | 0.077 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.052 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.055 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.065 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.556 | 0.030 | 0.027 | | | GAM |
| Thorium 232 | TH-232 | 0.574 | 0.087 | 0.077 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.129 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.05 | | U | GAM |
| Americium 241 | 14596-10-2 | 0.192 | 0.099 | 0.116 | | | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/23/10 |

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## Sample: J1C095, Radionuclides

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K2199

7082-003 J1C095

DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7082 | Client/Case no | Hanford | SDG K2199 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S008155-03 | Client sample id | J1C095 | | |
| Dept sample id | 7082-003 | Location/Matrix | 618-10-1 Trench Bottom | SOLID | |
| Received | 08/18/10 | Collected/Weight | 08/13/10 10:12 | 2512 g | |
| % solids | 94.4 | Custody/SAF No | RC-154-021 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 1.01 | 0.36 | 0.341 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 1.44 | 0.38 | 0.492 | 15.0 | | 93B |
| Tritium | 10028-17-8 | -1.04 | 2.0 | 3.50 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.77 | 0.50 | 0.786 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.045 | 0.13 | 0.378 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.406 | 0.18 | 0.172 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.027 | 0.055 | 0.209 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.473 | 0.23 | 0.172 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.055 | 0.11 | 0.418 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.11 | 0.418 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.3 | 0.54 | 0.169 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.023 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.035 | 0.013 | 0.017 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.439 | 0.048 | 0.043 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.670 | 0.11 | 0.106 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.055 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.087 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.061 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.524 | 0.029 | 0.024 | | | GAM |
| Thorium 232 | TH-232 | 0.670 | 0.11 | 0.106 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.131 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.97 | | U | GAM |
| Americium 241 | 14596-10-2 | 0.172 | 0.12 | 0.141 | | | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/23/10 |

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## Sample: J1C096, Radionuclides

**E B E R L I N E  A N A L Y T I C A L / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2199**

7082-004 J1C096

**D A T A  S H E E T**

| | | | | |
|---|---|---|---|---|
| SDG | 7082 | Client/Case no | Hanford | SDG_K2199 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | |
| Lab sample id | S008155-04 | Client sample id | J1C096 | |
| Dept sample id | 7082-004 | Location/Matrix | 618-10-1 Trench Bottom | SOLID |
| Received | 08/18/10 | Collected/Weight | 08/13/10 10:19 | 2597 g |
| % solids | 94.5 | Custody/SAF No | RC-154-021 | RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 12.5 | 4.4 | 3.49 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 15.0 | 4.1 | 5.51 | 15.0 | | 93B |
| Tritium | 10028-17-8 | -0.492 | 1.9 | 3.30 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.15 | 0.43 | 0.696 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.157 | 0.16 | 0.433 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.457 | 0.19 | 0.175 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.055 | 0.055 | 0.212 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.594 | 0.23 | 0.175 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.089 | 0.18 | 0.427 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.446 | 0.27 | 0.341 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 12.1 | 0.73 | 0.337 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.040 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.072 | 0.033 | 0.038 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.375 | 0.067 | 0.073 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.706 | 0.17 | 0.150 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.094 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.111 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.155 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.562 | 0.044 | 0.044 | | | GAM |
| Thorium 232 | TH-232 | 0.706 | 0.17 | 0.150 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.180 | | U | GAM |
| Uranium 238 | U-238 | U | | 4.46 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.257 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/23/10 |

## Sample: J1C097, Radionuclides

**E B E R L I N E  A N A L Y T I C A L / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2199**

7082-005 J1C097

**D A T A  S H E E T**

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7082 | Client/Case no | Hanford | SDG | K2199 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S008155-05 | Client sample id | J1C097 | | |
| Dept sample id | 7082-005 | Location/Matrix | 618-10-1 Trench Bottom | SOLID | |
| Received | 08/18/10 | Collected/Weight | 08/13/10 10:26 | 2541 g | |
| % solids | 94.0 | Custody/SAF No | RC-154-021 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 7.99 | 3.8 | 3.82 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 19.0 | 5.7 | 8.07 | 15.0 | | 93B |
| Tritium | 10028-17-8 | -1.43 | 1.7 | 3.07 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.43 | 0.44 | 0.707 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.053 | 0.14 | 0.418 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.576 | 0.26 | 0.245 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.039 | 0.078 | 0.296 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.640 | 0.26 | 0.245 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.100 | 0.20 | 0.381 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 1.34 | 0.52 | 0.381 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 11.9 | 0.72 | 0.236 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.026 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.037 | 0.020 | 0.024 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.406 | 0.049 | 0.045 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.535 | 0.095 | 0.096 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.060 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.083 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.065 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.558 | 0.034 | 0.031 | | | GAM |
| Thorium 232 | TH-232 | 0.535 | 0.095 | 0.096 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.129 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.90 | | U | GAM |
| Americium 241 | 14596-10-2 | 0.107 | 0.020 | 0.032 | | | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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**SUMMARY DATA SECTION**
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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/23/10 |

## Sample: J1C098, Radionuclides

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K2199

7082-006 J1C098

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7082 | Client/Case no | Hanford SDG K2199 |
| Contact | N. Joseph Veryille | Contract | No. S00W235A00 |
| Lab sample id | S008155-06 | Client sample id | J1C098 |
| Dept sample id | 7082-006 | Location/Matrix | 618-10-1 Trench Bottom SOLID |
| Received | 08/18/10 | Collected/Weight | 08/13/10 10:36 2446 g |
| % solids | 95.1 | Custody/SAF No | RC-154-021 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 10.8 | 4.1 | 3.01 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 21.8 | 4.3 | 5.09 | 15.0 | | 93B |
| Tritium | 10028-17-8 | -0.105 | 1.8 | 3.16 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.42 | 0.45 | 0.711 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.008 | 0.16 | 0.428 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.549 | 0.26 | 0.200 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0 | 0.063 | 0.242 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.758 | 0.27 | 0.200 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.090 | 0.090 | 0.344 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.045 | 0.090 | 0.344 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | U | | 0.210 | | U | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.027 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.032 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | U | | 0.097 | 0.100 | U | GAM |
| Radium 228 | 15262-20-1 | U | | 0.120 | 0.200 | U | GAM |
| Europium 152 | 14683-23-9 | U | | 0.117 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.094 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.109 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | U | | 0.070 | | U | GAM |
| Thorium 232 | TH-232 | U | | 0.120 | | U | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.230 | | U | GAM |
| Uranium 238 | U-238 | U | | 3.55 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.077 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/23/10 |

**DATA SHEETS**
Page 6
**SUMMARY DATA SECTION**
Page 20

# 618-10-1 Test Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C093, GEA

Apex™

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Analysis Report for RCF25262

J1C093 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25262 |
| Sample Description | : J1C093 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.130E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/13/2010 9:51:00AM |
| Acquisition Started | : 8/16/2010 9:00:21AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5389 |

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.972 | 6.65E+00 | 8.25E-01 | |
| | RA-226d | @ | 0.404 | 2.07E-01 | 4.26E-02 | |
| | TH-232d | | 0.825 | 2.45E-01 | 4.08E-02 | |
| X | U-235 | | 0.546 | | | |

## Sample: J1C094, GEA

Apex™

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Analysis Report for RCF25263

J1C094 SAF RC-154 618-10-1 Trench Bottom Soil In-Process

### GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25263 |
| Sample Description | : J1C094 SAF RC-154 618-10-1 Trench Bottom Soil In-Process |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.380E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/13/2010 10:00:00AM |
| Acquisition Started | : 8/16/2010 9:00:26AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5362 |

### INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.994 | 5.32E+00 | 7.08E-01 | |
| X | EU-155 | | 0.345 | | | |
| | PB-212 | | 0.998 | 1.78E-01 | 2.99E-02 | |
| | RA-226a | P | 0.773 | 1.76E-01 | 2.65E-02 | |
| | TH-232a | | 0.996 | 1.58E-01 | 2.80E-02 | |

## Sample: J1C095, GEA

Apex™

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Analysis Report for RCF25264

J1C095 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25264 |
| Sample Description | : J1C095 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.600E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/13/2010 10:12:00AM |
| Acquisition Started | : 8/16/2010 9:00:32AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 5383 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.952 | 5.22E+00 | 7.07E-01 | |
| PB-212 | | 0.709 | 2.32E-01 | 3.17E-02 | |
| RA-226d | @ | 0.709 | 1.68E-01 | 2.98E-02 | |
| TH-232d | | 0.849 | 1.71E-01 | 3.02E-02 | |

## Sample: J1C096, GEA

Apex™

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Analysis Report for RCF25265

J1C096 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25265 |
| Sample Description | : J1C096 SAF RC-154 618-10-1 Trench Bottom Soil In-Process |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.410E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/13/2010 10:19:00AM |
| Acquisition Started | : 8/16/2010 10:01:58AM |
| Procedure | : Non Standard Geometry |
| Operator | RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5386 |

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.988 | 5.99E+00 | 7.77E-01 | |
| RA-226d | @ | 0.828 | 1.89E-01 | 3.40E-02 | |
| TH-232d | | 0.598 | 1.44E-01 | 3.35E-02 | |

## Sample: J1C097, GEA

Apex™

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Analysis Report for RCF25266

J1C097 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25266 |
| Sample Description | : J1C097 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.330E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/13/2010 10:26:00AM |
| Acquisition Started | : 8/16/2010 10:02:04AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5387 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.976 | 5.55E+00 | 7.12E-01 | |
| PB-212 | | 0.711 | 2.12E-01 | 3.20E-02 | |
| RA-226d | @ | 0.844 | 1.99E-01 | 2.24E-02 | |
| TH-232d | | 0.853 | 2.02E-01 | 2.43E-02 | |
| U-238d | | 0.332 | 2.53E-01 | 2.58E-01 | LMDA DW 8/16/10 |

## Sample: J1C098, GEA

Apex™

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Analysis Report for RCF25267

J1C098 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25267 |
| Sample Description | : J1C098 SAF: RC-154 618-10-1 Trench Bottom Soil In-Process |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.620E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/13/2010 10:36:00AM |
| Acquisition Started | : 8/16/2010 10:02:10AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 5388 |

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.975 | 5.50E+00 | 7.02E-01 | |
| PB-212 | | 0.709 | 2.20E-01 | 3.12E-02 | |
| RA-226d | @ | 0.673 | 1.86E-01 | 2.98E-02 | |
| TH-232d | | 0.385 | 1.84E-01 | 3.03E-02 | |
| U-235 | | 0.545 | 3.38E-02 | 2.56E-02 | LMDA 0051610 |

# 618-10-1 Surge Pit Chemical Analytical Results
# Sample: J1C093, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 14:56 |

**J1C093**
**1008133-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2-Trichloroethane | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethane | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethane | 7.47 | U | 7.47 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethene (total) | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloropropane | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Butanone | 14.9 | U | 14.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Hexanone | 14.9 | U | 14.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 4-Methyl-2-pentanone | 14.9 | U | 14.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| **Acetone** | **8.04** | **J** | 14.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Benzene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromodichloromethane | 7.47 | U | 7.47 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromoform | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromomethane | 12.5 | U | 12.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Disulfide | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Tetrachloride | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chlorobenzene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroethane | 12.5 | U | 12.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroform | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloromethane | 12.5 | U | 12.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,2-Dichloroethene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,3-Dichloropropene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Dibromochloromethane | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Ethylbenzene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Methylene Chloride | 7.47 | U | 7.47 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Styrene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Tetrachloroethene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,2-Dichloroethene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Toluene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,3-Dichloropropene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Trichloroethene | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Vinyl chloride | 12.5 | U | 12.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Xylenes, total | 6.23 | U | 6.23 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *96 %* | | *63-151* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *91 %* | | *68-140* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *112 %* | | *66-122* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |

## Sample: J1C094, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-5000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 14:56 |

**J1C094**
**1008133-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethane | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethane | 5.09 U | 5.09 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloropropane | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Butanone | 10.2 U | 10.2 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Hexanone | 10.2 U | 10.2 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.2 U | 10.2 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| **Acetone** | **12.6** | 10.2 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Benzene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromodichloromethane | 5.09 U | 5.09 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromoform | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromomethane | 8.48 U | 8.48 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Disulfide | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Tetrachloride | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chlorobenzene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroethane | 8.48 U | 8.48 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroform | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloromethane | 8.48 U | 8.48 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Dibromochloromethane | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Ethylbenzene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Methylene Chloride | 5.09 U | 5.09 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Styrene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Tetrachloroethene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Toluene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Trichloroethene | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Vinyl chloride | 8.48 U | 8.48 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Xylenes, total | 4.24 U | 4.24 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *94 %* | *63-151* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *88 %* | *68-140* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | *66-122* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |

## Sample: J1C095, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 14:56 |

**J1C095**
**1008133-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethane | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethane | 6.19 U | 6.19 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloropropane | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Butanone | 12.4 U | 12.4 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Hexanone | 12.4 U | 12.4 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.4 U | 12.4 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| **Acetone** | **33.3** | 12.4 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Benzene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromodichloromethane | 6.19 U | 6.19 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromoform | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromomethane | 10.3 U | 10.3 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Disulfide | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Tetrachloride | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chlorobenzene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroethane | 10.3 U | 10.3 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroform | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloromethane | 10.3 U | 10.3 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Dibromochloromethane | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Ethylbenzene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Methylene Chloride | 6.19 U | 6.19 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Styrene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Tetrachloroethene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Toluene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Trichloroethene | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Vinyl chloride | 10.3 U | 10.3 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Xylenes, total | 5.16 U | 5.16 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *99 %* | *63-151* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *92 %* | *68-140* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *123 % ** | *66-122* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |

## Sample: J1C096, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 14:56 |

**J1C096**
**1008133-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethane | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloropropane | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Butanone | 10.5 U | 10.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Hexanone | 10.5 U | 10.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.5 U | 10.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| **Acetone** | **3.85** J | 10.5 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Benzene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromodichloromethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromoform | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromomethane | 8.77 U | 8.77 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Disulfide | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Tetrachloride | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chlorobenzene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroethane | 8.77 U | 8.77 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroform | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloromethane | 8.77 U | 8.77 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Dibromochloromethane | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Ethylbenzene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Methylene Chloride | 5.26 U | 5.26 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Styrene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Tetrachloroethene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Toluene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Trichloroethene | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Vinyl chloride | 8.77 U | 8.77 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Xylenes, total | 4.39 U | 4.39 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *108 %* | *63-151* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *92 %* | *68-140* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *128 % ** | *66-122* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |

## Sample: J1C097, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 14:56 |

**J1C097**
**1008133-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethane | 6.36 U | 6.36 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloropropane | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Butanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Hexanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| **Acetone** | **13.5** | 12.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Benzene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromodichloromethane | 6.36 U | 6.36 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromoform | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromomethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Disulfide | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Tetrachloride | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chlorobenzene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroform | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloromethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Dibromochloromethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Ethylbenzene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Methylene Chloride | 6.36 U | 6.36 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Styrene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Tetrachloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Toluene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Trichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Vinyl chloride | 10.6 U | 10.6 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Xylenes, total | 5.30 U | 5.30 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *98 %* | *63-151* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *130 % ** | *66-122* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |

## Sample: J1C098, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 09/09/2010 14:56 |

**J1C098**
**1008133-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,1-Dichloroethene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethane | 6.43 U | 6.43 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 1,2-Dichloropropane | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Butanone | 12.9 U | 12.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 2-Hexanone | 12.9 U | 12.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.9 U | 12.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Acetone | 12.9 U | 12.9 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Benzene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromodichloromethane | 6.43 U | 6.43 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromoform | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Bromomethane | 10.7 U | 10.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Disulfide | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Carbon Tetrachloride | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chlorobenzene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroethane | 10.7 U | 10.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloroform | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Chloromethane | 10.7 U | 10.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Dibromochloromethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Ethylbenzene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Methylene Chloride | 6.43 U | 6.43 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Styrene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Tetrachloroethene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Toluene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Trichloroethene | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Vinyl chloride | 10.7 U | 10.7 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| Xylenes, total | 5.35 U | 5.35 | ug/kg dry | 1 | L009091 | 09/08/2010 | 09/08/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *100 %* | *63-131* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *114 %* | *66-122* | | | *L009091* | *09/08/2010* | *09/08/2010* | *8260B* |

## Sample: J1C093, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C093**
**1008133-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 1,2-Dichlorobenzene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 1,3-Dichlorobenzene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 1,4-Dichlorobenzene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,4,5-Trichlorophenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,4,6-Trichlorophenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,4-Dichlorophenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,4-Dimethylphenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,4-Dinitrophenol | 2000 | U | 2000 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,4-Dinitrotoluene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2,6-Dinitrotoluene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2-Chloronaphthalene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2-Chlorophenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2-Methylnaphthalene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2-Methylphenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2-Nitroaniline | 2000 | U | 2000 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 2-Nitrophenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 801 | U | 801 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 3-Nitroaniline | 2000 | U | 2000 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4-Chloro-3-methylphenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4-Chloroaniline | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 3- and/or 4-Methylphenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4-Nitroaniline | 2000 | U | 2000 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| 4-Nitrophenol | 2000 | U | 2000 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Acenaphthene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Acenaphthylene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Anthracene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Benz[a]anthracene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Benzo[a] pyrene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Benzo[b] fluoranthene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Benzo[g,h,i] perylene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Benzo[k] fluoranthene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Bis(2-chloroethyl) ether | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |

## Sample: J1C093, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C093**
**1008133-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Carbazole | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Chrysene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Dibenz[a,h]anthracene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Dibenzofuran | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Diethyl Phthalate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Dimethyl Phthalate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Di-n-butyl Phthalate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Di-n-octyl Phthalate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Fluoranthene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Fluorene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Hexachlorobenzene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Hexachlorobutadiene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Hexachlorocyclopentadiene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Hexachloroethane | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Isophorone | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Naphthalene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Nitrobenzene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| N-Nitrosodiphenylamine | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Pentachlorophenol | 2000 | U | 2000 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Phenanthrene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Phenol | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Pyrene | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| **TIC:Unknown 2** | **493** | **J** | | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| **TIC:Unknown 1** | **440** | **J** | | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| **TIC:Unknown 3** | **661** | **J** | | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| **TIC:Aldol 2** | **74500** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| **TIC:Aldol 1** | **477** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| Tributylphosphate | 401 | U | 401 | ug/kg dry | 1 | L008253 | 08/24/2010 | 08/30/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *52 %* | | *25-121* | | | *L008253* | *08/24/2010* | *08/30/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *53 %* | | *24-113* | | | *L008253* | *08/24/2010* | *08/30/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *56 %* | | *23-120* | | | *L008253* | *08/24/2010* | *08/30/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *57 %* | | *30-115* | | | *L008253* | *08/24/2010* | *08/30/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *55 %* | | *19-122* | | | *L008253* | *08/24/2010* | *08/30/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *67 %* | | *18-137* | | | *L008253* | *08/24/2010* | *08/30/2010* | *8270C* |

## Sample: J1C094, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Keisner | 09/09/2010 11:45 |

**J1C094**
**1008133-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1640 U | 1640 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1640 U | 1640 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 655 U | 655 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1640 U | 1640 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1640 U | 1640 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1640 U | 1640 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Anthracene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |

## Sample: J1C094, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C094**
**1008133-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Carbazole | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Chrysene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluorene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Isophorone | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Naphthalene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1640 U | 1640 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenol | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pyrene | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **1050 B, J** | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 2** | **41500 A, B, J** | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **205 A, B, J** | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Tributylphosphate | 327 U | 327 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *63 %* | *25-121* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *63 %* | *24-113* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *65 %* | *23-120* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *73 %* | *30-115* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *69 %* | *19-122* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *73 %* | *18-137* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |

## Sample: J1C095, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C095**
**1008133-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1970 U | 1970 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1970 U | 1970 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 787 U | 787 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1970 U | 1970 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1970 U | 1970 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1970 U | 1970 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Anthracene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 394 U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |

## Sample: J1C095, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C095**
**1008133-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Carbazole | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Chrysene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluorene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Isophorone | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Naphthalene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1970 | U | 1970 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenol | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pyrene | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **1630** | B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Alkane 1** | **166** | B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 2** | **41600** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **300** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Tributylphosphate | 394 | U | 394 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *56 %* | | *25-121* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *63 %* | | *24-113* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *55 %* | | *23-120* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *65 %* | | *30-115* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *66 %* | | *19-122* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *66 %* | | *18-137* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |

## Sample: J1C096, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C096**
**1008133-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 688 U | 688 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Anthracene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **Bis(2-ethylhexyl) phthalate** | **521** | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |

## Sample: J1C096, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 09/09/2010 11:45 |

**J1C096**
**1008133-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Carbazole | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Chrysene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluorene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Isophorone | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Naphthalene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1720 U | 1720 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenol | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pyrene | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **2490** B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **29200** A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Tributylphosphate | 344 U | 344 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *50 %* | *25-121* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *52 %* | *24-113* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *49 %* | *23-120* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *55 %* | *30-115* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *37 %* | *19-122* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *55 %* | *18-137* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |

## Sample: J1C097, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C097**
**1008133-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1770 U | 1770 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1770 U | 1770 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 707 U | 707 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1770 U | 1770 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1770 U | 1770 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1770 U | 1770 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Anthracene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 354 U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |

## Sample: J1C097, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C097**
**1008133-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Carbazole | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **Chrysene** | **85.1** | J | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluorene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Isophorone | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Naphthalene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1770 | U | 1770 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenol | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **Pyrene** | **63.2** | J | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **1930** | B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Alkane 1** | **166** | B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **49200** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Tributylphosphate | 354 | U | 354 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *64 %* | | *25-121* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *70 %* | | *24-113* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *63 %* | | *23-120* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *75 %* | | *30-115* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *68 %* | | *19-122* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *73 %* | | *18-137* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |

## Sample: J1C098, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C098**
**1008133-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 682 U | 682 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Anthracene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 341 U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |

## Sample: J1C098, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Ferris Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 11:45 |

**J1C098**
**1008133-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Carbazole | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Chrysene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluorene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Isophorone | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Naphthalene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1710 | U | 1710 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenol | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pyrene | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 3** | **3630** | J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 2** | **5010** | J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **4090** | J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 4** | **5730** | J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **42400** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Tributylphosphate | 341 | U | 341 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *66 %* | | *25-121* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *73 %* | | *24-113* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *65 %* | | *23-120* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *75 %* | | *30-115* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *69 %* | | *19-122* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *80 %* | | *18-137* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |

## Sample: J1C093, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2199<br>Project Manager: Joan Kessner | **Reported:**<br>08/28/2010 07:52 |

**J1C093**
**1008133-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | | |
| Aroclor 1016 | 162 | U | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| Aroclor 1221 | 162 | U | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| Aroclor 1232 | 162 | U | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| **Aroclor 1242** | **1310** | D | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| Aroclor 1248 | 162 | U | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| Aroclor 1254 | 162 | U | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| Aroclor 1260 | 162 | U | 162 | ug/kg dry | 10 | L008229 | 08/20/2010 | 08/26/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *115 %* | | *43-144* | | | *L008229* | *08/20/2010* | *08/26/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *111 %* | | *52-141* | | | *L008229* | *08/20/2010* | *08/26/2010* | *8082* |

## Sample: J1C094, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2199<br>Project Manager: Joan Kessner | **Reported:**<br>08/28/2010 07:52 |

**J1C094**
**1008133-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | | |
| Aroclor 1016 | 54.7 | U | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1221 | 54.7 | U | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1232 | 54.7 | U | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| **Aroclor 1242** | **725** | D | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1248 | 54.7 | U | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1254 | 54.7 | U | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1260 | 54.7 | U | 54.7 | ug/kg dry | 4 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *118 %* | | *43-144* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *146 % ** | | *52-141* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |

## Sample: J1C095, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 07:52 |

**J1C095**
**1008133-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 15.5 U | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1221 | 15.5 U | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1232 | 15.5 U | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| **Aroclor 1242** | **18.2** | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1248 | 15.5 U | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1254 | 15.5 U | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1260 | 15.5 U | 15.5 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *80 %* | *43-144* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *120 %* | *52-141* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |

## Sample: J1C096, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 07:52 |

**J1C096**
**1008133-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 14.0 U | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1221 | 14.0 U | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1232 | 14.0 U | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| **Aroclor 1242** | **21.3** | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1248 | 14.0 U | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1254 | 14.0 U | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1260 | 14.0 U | 14.0 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *63 %* | *43-144* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *96 %* | *52-141* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |

## Sample: J1C097, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 08/28/2010 07:52 |

**J1C097**
**1008133-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 14.1 U | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1221 | 14.1 U | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1232 | 14.1 U | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| **Aroclor 1242** | **141** | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1248 | 14.1 U | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1254 | 14.1 U | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1260 | 14.1 U | 14.1 | ug/kg dry | 1 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *63 %* | *43-144* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *96 %* | *52-141* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |

## Sample: J1C098, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 08/28/2010 07:52 |

**J1C098**
**1008133-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 68.0 U | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1221 | 68.0 U | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1232 | 68.0 U | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| **Aroclor 1242** | **1140** D | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1248 | 68.0 U | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1254 | 68.0 U | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| Aroclor 1260 | 68.0 U | 68.0 | ug/kg dry | 5 | L008229 | 08/20/2010 | 08/24/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *105 %* | *43-144* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *114 %* | *52-141* | | | *L008229* | *08/20/2010* | *08/24/2010* | *8082* |

## Sample: J1C093, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C093**
**1008133-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **6300** | | 4.36 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Antimony | 0.523 | U | 0.523 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Arsenic** | **2.58** | | 0.872 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Barium** | **64.6** | | 0.436 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Beryllium** | **0.249** | | 0.174 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Boron** | **0.786** | J | 1.74 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cadmium** | **0.0876** | J | 0.174 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Calcium** | **6370** | | 87.2 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Chromium** | **6.54** | | 0.174 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cobalt** | **6.70** | | 1.74 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Copper** | **12.0** | | 0.872 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Iron** | **24500** | | 17.4 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Lead** | **3.46** | | 0.436 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Magnesium** | **4070** | | 65.4 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Manganese** | **316** | | 4.36 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Molybdenum** | **0.501** | J | 1.74 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Nickel** | **8.13** | | 3.49 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Potassium** | **900** | | 349 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Selenium | 0.262 | U | 0.262 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Silicon** | **1930** | | 1.74 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Silver | 0.174 | U | 0.174 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Sodium** | **470** | | 43.6 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Vanadium** | **70.8** | | 2.18 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zinc** | **46.9** | | 8.72 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zirconium** | **28.1** | | 4.36 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Mercury | 0.0314 | U | 0.0314 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/26/2010 | 7471A |

## Sample: J1C093, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C093**
**1008133-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | |
| Arsenic | 0.0900 U | 0.0900 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| **Barium** | **0.263** | 0.00600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Cadmium | 0.0180 U | 0.0180 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Chromium | 0.0300 U | 0.0300 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Lead | 0.0600 U | 0.0600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Selenium | 0.120 U | 0.120 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Silver | 0.0360 U | 0.0360 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Mercury | 0.000200 U | 0.000200 | mg/L | 1 | L009969 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C094, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C094**
**1008133-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5870** | | 5.06 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Antimony | 0.607 | U | 0.607 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Arsenic** | **2.68** | | 1.01 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Barium** | **67.1** | | 0.506 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Beryllium** | **0.234** | | 0.202 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Boron** | **0.703** | J | 2.02 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cadmium** | **0.100** | J | 0.202 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Calcium** | **5560** | | 101 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Chromium** | **6.40** | | 0.202 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cobalt** | **6.86** | | 2.02 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Copper** | **10.4** | | 1.01 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Iron** | **23100** | | 20.2 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Lead** | **3.19** | | 0.506 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Magnesium** | **3990** | | 75.9 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Manganese** | **388** | | 5.06 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Molybdenum** | **0.468** | J | 2.02 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Nickel** | **7.71** | | 4.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Potassium** | **796** | | 405 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Selenium | 0.303 | U | 0.303 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Silicon** | **1530** | | 2.02 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Silver | 0.202 | U | 0.202 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Sodium** | **363** | | 50.6 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Vanadium** | **68.0** | | 2.53 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zinc** | **42.1** | | 10.1 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zirconium** | **24.1** | | 5.06 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Mercury | 0.0278 | U | 0.0278 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/26/2010 | 7471A |

## Sample: J1C094, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2159 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C094**
**1008133-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| **Barium** | **0.294** | | 0.00600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009069 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C095, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C095**
**1008133-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5690** | | 5.25 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Antimony | 0.630 | U | 0.630 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Arsenic** | **2.82** | | 1.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Barium** | **61.4** | | 0.525 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Beryllium** | **0.255** | | 0.210 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Boron** | **0.984** | J | 2.10 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cadmium** | **0.0995** | J | 0.210 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Calcium** | **6090** | | 105 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Chromium** | **5.78** | | 0.210 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cobalt** | **6.44** | | 2.10 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Copper** | **12.1** | | 1.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Iron** | **24100** | | 21.0 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Lead** | **3.25** | | 0.525 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Magnesium** | **3960** | | 78.7 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Manganese** | **278** | | 5.25 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Molybdenum** | **0.437** | J | 2.10 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Nickel** | **7.88** | | 4.20 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Potassium** | **864** | | 420 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Selenium | 0.315 | U | 0.315 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Silicon** | **1610** | | 2.10 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Silver | 0.210 | U | 0.210 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Sodium** | **364** | | 52.5 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Vanadium** | **68.7** | | 2.62 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zinc** | **42.0** | | 10.5 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zirconium** | **25.0** | | 5.25 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Mercury | 0.0288 | U | 0.0288 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/26/2010 | 7471A |

## Sample: J1C095, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C095**
**1008133-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | |
| Arsenic | 0.0900 U | 0.0900 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| **Barium** | **0.240** | 0.00600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Cadmium | 0.0180 U | 0.0180 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Chromium | 0.0300 U | 0.0300 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Lead | 0.0600 U | 0.0600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Selenium | 0.120 U | 0.120 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Silver | 0.0360 U | 0.0360 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Mercury | 0.000200 U | 0.000200 | mg/L | 1 | L009069 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C096, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C096**
**1008133-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | |
| **Aluminum** | **6140** | 3.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Antimony | 0.464 U | 0.464 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Arsenic** | **2.92** | 0.774 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Barium** | **64.0** | 0.387 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Beryllium** | **0.255** | 0.155 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Boron** | **0.767 J** | 1.55 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cadmium** | **0.0962 J** | 0.155 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Calcium** | **5770** | 77.4 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Chromium** | **7.97** | 0.155 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cobalt** | **6.34** | 1.55 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Copper** | **10.9** | 0.774 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Iron** | **22300** | 15.5 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Lead** | **3.70** | 0.387 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Magnesium** | **4030** | 58.1 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Manganese** | **311** | 3.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Molybdenum** | **0.396 J** | 1.55 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Nickel** | **9.04** | 3.10 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Potassium** | **848** | 310 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Selenium | 0.232 U | 0.232 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Silicon** | **1090** | 1.55 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Silver | 0.155 U | 0.155 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Sodium** | **345** | 38.7 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Vanadium** | **66.2** | 1.94 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zinc** | **41.6** | 7.74 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zirconium** | **25.0** | 3.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Mercury | 0.0316 U | 0.0316 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/26/2010 | 7471A |

## Sample: J1C096, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C096**
**1008133-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | |
| Arsenic | 0.0900 U | 0.0900 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| **Barium** | **0.285** | 0.00600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Cadmium | 0.0180 U | 0.0180 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Chromium | 0.0300 U | 0.0300 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Lead | 0.0600 U | 0.0600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Selenium | 0.120 U | 0.120 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Silver | 0.0360 U | 0.0360 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Mercury | 0.000200 U | 0.000200 | mg/L | 1 | L009069 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C097, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C097**
**1008133-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5720** | | 4.58 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Antimony | 0.550 | U | 0.550 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Arsenic** | **2.70** | | 0.916 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Barium** | **108** | | 0.458 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Beryllium** | **0.245** | | 0.183 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Boron** | **0.819** | J | 1.83 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cadmium** | **0.0900** | J | 0.183 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Calcium** | **7370** | | 91.6 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Chromium** | **4.74** | | 0.183 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cobalt** | **6.64** | | 1.83 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Copper** | **11.7** | | 0.916 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Iron** | **24100** | | 18.3 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Lead** | **3.07** | | 0.458 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Magnesium** | **3950** | | 68.7 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Manganese** | **307** | | 4.58 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Molybdenum** | **0.465** | J | 1.83 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Nickel** | **7.06** | | 3.67 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Potassium** | **903** | | 367 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Selenium | 0.275 | U | 0.275 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Silicon** | **1300** | | 1.83 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Silver | 0.183 | U | 0.183 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Sodium** | **392** | | 45.8 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Vanadium** | **68.7** | | 2.29 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zinc** | **43.9** | | 9.16 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zirconium** | **25.1** | | 4.58 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Mercury | 0.0243 | U | 0.0243 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/26/2010 | 7471A |

## Sample: J1C097, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C097**
**1008133-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| **Barium** | **0.294** | | 0.00600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009069 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C098, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C098**
**1008133-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5750** | | 4.69 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Antimony | 0.562 | U | 0.562 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Arsenic** | **3.04** | | 0.937 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Barium** | **64.5** | | 0.469 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Beryllium** | **0.230** | | 0.187 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Boron** | **0.716** | J | 1.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cadmium** | **0.0815** | J | 0.187 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Calcium** | **5360** | | 93.7 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Chromium** | **5.11** | | 0.187 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Cobalt** | **6.13** | | 1.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Copper** | **10.6** | | 0.937 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Iron** | **22100** | | 18.7 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Lead** | **3.09** | | 0.469 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Magnesium** | **3610** | | 70.3 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Manganese** | **322** | | 4.69 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Molybdenum** | **0.420** | J | 1.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Nickel** | **6.65** | | 3.75 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Potassium** | **850** | | 375 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Selenium | 0.281 | U | 0.281 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Silicon** | **1130** | | 1.87 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Silver | 0.187 | U | 0.187 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Sodium** | **303** | | 46.9 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Vanadium** | **65.2** | | 2.34 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zinc** | **42.2** | | 9.37 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| **Zirconium** | **23.9** | | 4.69 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/04/2010 | 6010B |
| Mercury | 0.0262 | U | 0.0262 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/26/2010 | 7471A |

## Sample: J1C098, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 12:47 |

**J1C098**

**1008133-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | |
| Arsenic | 0.0900 U | 0.0900 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| **Barium** | **0.235** | 0.00600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Cadmium | 0.0180 U | 0.0180 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Chromium | 0.0300 U | 0.0300 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Lead | 0.0600 U | 0.0600 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Selenium | 0.120 U | 0.120 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Silver | 0.0360 U | 0.0360 | mg/L | 6 | L008305 | 08/27/2010 | 09/03/2010 | 6010 |
| Mercury | 0.000200 U | 0.000200 | mg/L | 1 | L009069 | 09/08/2010 | 09/09/2010 | 7470 |

# Sample: J1C093 and J1C094, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 13:49 |

## Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C093 (1008133-01) Soil** | | | | | | | | |
| **%Solids** | 81.9 | 0.1 | % by Weight | 1 | L008254 | 08/23/2010 | 08/23/2010 | EPA 160.6 |
| Bromide | 3.0 U | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | 535 | 29.7 | mg/kg dry | 10 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Fluoride | 3.0 U | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | 7.2 | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 29.7 U | 29.7 | mg/kg dry | 10 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | 8.3 | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | 3.8 | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 1.78 | 0.24 | mg/kg dry | 1 | L009093 | 09/02/2010 | 09/02/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.10 B | 0.24 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 1.20 U | 1.20 | mg/kg dry | 1 | L008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| **Sulfide, total** | 5.74 B | 24.4 | mg/kg dry | 1 | L008314 | 08/26/2010 | 08/26/2010 | SW846 9034 |
| **pH** | 7.44 | 0.10 | pH Units | 1 | L009006 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C094 (1008133-02) Soil** | | | | | | | | |
| **%Solids** | 95.1 | 0.1 | % by Weight | 1 | L008254 | 08/23/2010 | 08/23/2010 | EPA 160.6 |
| Bromide | 2.4 U | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | 812 | 47.2 | mg/kg dry | 20 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Fluoride | 2.4 U | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | 2.8 | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 47.2 U | 47.2 | mg/kg dry | 20 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.4 U | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | 1.8 B, J | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 0.69 | 0.19 | mg/kg dry | 1 | L009093 | 09/02/2010 | 09/02/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.15 B | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 1.01 U | 1.01 | mg/kg dry | 1 | L008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| **Sulfide, total** | 24.8 | 21.0 | mg/kg dry | 1 | L008314 | 08/26/2010 | 08/26/2010 | SW846 9034 |
| **pH** | 7.64 | 0.10 | pH Units | 1 | L009006 | 08/31/2010 | 08/31/2010 | SW846 9045D |

## Sample: J1C095 and J1C096, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 13:49 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C095 (1008133-03) Soil** | | | | | | | | |
| **%Solids** | 82.2 | 0.1 | % by Weight | 1 | L008254 | 08/23/2010 | 08/23/2010 | EPA 160.6 |
| Bromide | 3.0 U | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | 1740 | 148 | mg/kg dry | 50 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Fluoride | 3.0 U | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | 4.4 | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 148 U | 148 | mg/kg dry | 50 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | 1.9 B, J | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | 3.7 | 3.0 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 1.22 | 0.24 | mg/kg dry | 1 | L009093 | 09/02/2010 | 09/02/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.09 B | 0.24 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 1.15 U | 1.15 | mg/kg dry | 1 | L008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| **Sulfide, total** | 24.1 B | 24.3 | mg/kg dry | 1 | L008314 | 08/26/2010 | 08/26/2010 | SW846 9034 |
| **pH** | 7.36 | 0.10 | pH Units | 1 | L009006 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C096 (1008133-04) Soil** | | | | | | | | |
| **%Solids** | 95.0 | 0.1 | % by Weight | 1 | L008254 | 08/23/2010 | 08/23/2010 | EPA 160.6 |
| Bromide | 2.6 U | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | 967 | 51.2 | mg/kg dry | 20 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Fluoride** | 0.4 B, J | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | 3.0 | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 51.2 U | 51.2 | mg/kg dry | 20 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | 1.4 B, J | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | 3.1 | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 0.79 | 0.20 | mg/kg dry | 1 | L009093 | 09/02/2010 | 09/02/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.12 B | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 1.00 U | 1.00 | mg/kg dry | 1 | L008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| Sulfide, total | 21.1 U | 21.1 | mg/kg dry | 1 | L008314 | 08/26/2010 | 08/26/2010 | SW846 9034 |
| **pH** | 7.65 | 0.10 | pH Units | 1 | L009006 | 08/31/2010 | 08/31/2010 | SW846 9045D |

## Sample: J1C097 and J1C098, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/10/2010 13:49 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C097 (1008133-05) Soil** | | | | | | | | |
| **%Solids** | 92.5 | 0.1 | % by Weight | 1 | L008254 | 08/23/2010 | 08/23/2010 | EPA 160.6 |
| Bromide | 2.4 U | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | 1840 | 120 | mg/kg dry | 50 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Fluoride | 2.4 U | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | 3.0 | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 120 U | 120 | mg/kg dry | 50 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.4 U | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | 2.2 B, J | 2.4 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 0.89 | 0.19 | mg/kg dry | 1 | L009093 | 09/02/2010 | 09/02/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.09 B | 0.22 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 1.05 U | 1.05 | mg/kg dry | 1 | L008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| **Sulfide, total** | 33.9 | 21.6 | mg/kg dry | 1 | L009094 | 08/30/2010 | 08/30/2010 | SW846 9034 |
| **pH** | 7.49 | 0.10 | pH Units | 1 | L009006 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C098 (1008133-06) Soil** | | | | | | | | |
| **%Solids** | 95.3 | 0.1 | % by Weight | 1 | L008254 | 08/23/2010 | 08/23/2010 | EPA 160.6 |
| Bromide | 2.6 U | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | 56.6 | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Fluoride** | 0.8 B, J | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | 3.6 | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 2.6 U | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | 1.6 B, J | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | 3.3 | 2.6 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 1.00 | 0.21 | mg/kg dry | 1 | L009093 | 09/02/2010 | 09/02/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.13 B | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 1.03 U | 1.03 | mg/kg dry | 1 | L008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| **Sulfide, total** | 14.5 B | 21.0 | mg/kg dry | 1 | L009094 | 08/30/2010 | 08/30/2010 | SW846 9034 |
| **pH** | 8.29 | 0.10 | pH Units | 1 | L009006 | 08/31/2010 | 08/31/2010 | SW846 9045D |

## Sample: J1C093 – J1C097, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/30/2010 13:06 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C093 (1008133-01) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *82 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/28/2010* | *8015M* |
| Diesel Range Organics | 3900 U | 3900 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/28/2010 | 8015M |
| **Motor Oil** | 210000 | 11700 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/28/2010 | 8015M |
| Kerosene | 11700 U | 11700 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/28/2010 | 8015M |
| **J1C094 (1008133-02) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *86 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/29/2010* | *8015M* |
| Diesel Range Organics | 34400 U | 34400 | ug/kg dry | 10 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **Motor Oil** | 1040000 D | 103000 | ug/kg dry | 10 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| Kerosene | 103000 U | 103000 | ug/kg dry | 10 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **J1C095 (1008133-03) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *104 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/29/2010* | *8015M* |
| Diesel Range Organics | 7980 U | 7980 | ug/kg dry | 2 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **Motor Oil** | 391000 D | 23900 | ug/kg dry | 2 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| Kerosene | 23900 U | 23900 | ug/kg dry | 2 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **J1C096 (1008133-04) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *97 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/29/2010* | *8015M* |
| Diesel Range Organics | 17000 U | 17000 | ug/kg dry | 5 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **Motor Oil** | 630000 D | 51100 | ug/kg dry | 5 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| Kerosene | 51100 U | 51100 | ug/kg dry | 5 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **J1C097 (1008133-05) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *80 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/29/2010* | *8015M* |
| Diesel Range Organics | 17600 U | 17600 | ug/kg dry | 5 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| **Motor Oil** | 650000 D | 52700 | ug/kg dry | 5 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |
| Kerosene | 52700 U | 52700 | ug/kg dry | 5 | L008246 | 08/23/2010 | 08/29/2010 | 8015M |

## Sample: J1C098, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2199 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/30/2010 13:06 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C098 (1008133-06) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *77 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/28/2010* | *8015M* |
| Diesel Range Organics | 3560 U | 3560 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/28/2010 | 8015M |
| **Motor Oil** | 28300 | 10700 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/28/2010 | 8015M |
| Kerosene | 10700 U | 10700 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/28/2010 | 8015M |

# 618-10-1 Test Pit Asbestos
# Sample: J1C093 and J1C098, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 232440 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01101 |
| Date: | 9/3/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5QED1AA** | **L5QEF1AA** | **L5QEG1AA** | **L5QEH1AA** | **L5QEJ1AA** |
| **Client ID** | J1C093' | J1C094' | J1C095' | J1C096' | J1C097' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

3 TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 232440_2 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01101 |
| Date: | 9/3/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5QEL1AA** | | | | |
| **Client ID** | J1C098' | | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | | | | |
| Homogeneous | Y | | | | |
| Color | dark brown | | | | |
| % Visible Fibers | TRA | | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | | | | |
| %Amosite | ND | | | | |
| %Crocidolite | ND | | | | |
| %Tremolite | ND | | | | |
| %Actinolite | ND | | | | |
| % Anthophylite | ND | | | | |
| **% Total Asbestos** | **ND** | | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | | | | |
| % Glass Fibers | ND | | | | |
| % Other fibers | ND | | | | |
| % Non-fibrous | 100 | | | | |

***Comments:***

4 **Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

# LABORATORY DATA RESULTS

## 618-10-2 TEST PIT

# 618-10-2 Surge Pit Radionuclide Analytical Results
# Sample: J1C1D4, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2288

7884-001 J1C1D4

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-01 | Client sample id | J1C1D4 |
| Dept sample id | 7884-001 | Location/Matrix | 618-10-2 Surge Pit Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/25/10 12:20 1289 g |
| % solids | 93.8 | Custody/SAF No | RC-154:028 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.766 | 2.3 | 3.92 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 2.84 | 0.51 | 0.786 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.021 | 0.20 | 0.401 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.508 | 0.23 | 0.177 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0 | 0.056 | 0.214 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.323 | 0.19 | 0.177 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.054 | 0.055 | 0.261 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.054 | 0.208 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.5 | 0.38 | 0.149 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.015 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.029 | 0.010 | 0.013 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.398 | 0.030 | 0.028 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.672 | 0.076 | 0.066 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.036 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.051 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.053 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.534 | 0.020 | 0.017 | | | GAM |
| Thorium 232 | TH-232 | 0.672 | 0.076 | 0.066 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.085 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.76 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.025 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

**DATA SHEETS**
Page 1
**SUMMARY DATA SECTION**
Page 12

# 618-10-2 Surge Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1CD4, GEA

Apex™

8/26/2010 2:10:12PM Page 1 of 4

Analysis Report for RCF25417

J1C1D4 SAF:RC-154 618-10-2 SURGE PIT SOIL PILE 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25417 |
| Sample Description | : J1C1D4 SAF:RC-154 618-10-2 SURGE PIT SOIL PILE 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 2.010E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/25/2010 12:20:00PM |
| Acquisition Started | : 8/26/2010 1:09:58PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3601.0 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5960 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.979 | 8.16E+00 | 1.21E+00 | |
| PB-212 | | 0.711 | 2.52E-01 | 5.17E-02 | |
| RA-226d | @ | 0.845 | 2.89E-01 | 5.16E-02 | |
| TH-232d | | 0.844 | 2.69E-01 | 4.02E-02 | |

# 618-10-2 Surge Pit Chemical Analytical Results
## Sample: J1C1D4, VOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D4**
**1009009-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.43 | U | 5.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 10.9 | U | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 10.9 | U | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.9 | U | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **23.9** | | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.43 | U | 5.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 9.05 | U | 9.05 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 9.05 | U | 9.05 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 9.05 | U | 9.05 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.43 | U | 5.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 9.05 | U | 9.05 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *84 %* | | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *96 %* | | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *118 %* | | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D4, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1D4**
**1009009-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,2-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,3-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,4-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4,5-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4,6-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dimethylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dinitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,6-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Chloronaphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Chlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Methylnaphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Nitrophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 693 U | 693 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chloro-3-methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chloroaniline | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3- and/or 4-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Nitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Acenaphthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Acenaphthylene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benz[a]anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[a] pyrene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[b] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[g,h,i] perylene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[k] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroethyl) ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |

## Sample: J1C1D4, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1D4**
**1009009-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Carbazole | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Chrysene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dibenz[a,h]anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dibenzofuran | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Diethyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dimethyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Di-n-butyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Di-n-octyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Fluorene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorobutadiene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorocyclopentadiene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachloroethane | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Isophorone | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Naphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Nitrobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| N-Nitrosodiphenylamine | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Pentachlorophenol | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Phenanthrene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Phenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Pyrene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Unknown 2** | **254** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Unknown 1** | **1070** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 2** | **66300** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 3** | **271** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 1** | **473** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Tributylphosphate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *59 %* | *25-121* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *64 %* | *24-113* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *68 %* | *23-120* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *70 %* | *30-115* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *54 %* | *19-122* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *88 %* | *18-137* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |

## Sample: J1C1D4, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 19:59 |

**J1C1D4**
**1009009-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.8 U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *145 % ** | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *144 % ** | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

## Sample: J1C1D4, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 11:12 |

**J1C1D4**
**1009009-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5010** | | 3.75 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.450 | U | 0.450 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.36** | | 0.750 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **62.2** | | 0.375 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.227** | | 0.150 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.693** | B | 1.50 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.133** | B | 0.150 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **4830** | | 75.0 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **7.30** | | 0.150 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **5.99** | | 1.50 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **10.7** | | 0.750 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **21500** | | 15.0 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **3.94** | | 0.375 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **3980** | | 56.3 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **289** | | 3.75 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.338** | B | 1.50 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **8.31** | | 3.00 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **800** | | 300 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.225 | U | 0.225 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **305** | | 1.50 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Silver | 0.150 | U | 0.150 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **195** | | 37.5 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **61.5** | | 1.88 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **40.5** | | 7.50 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **21.5** | | 3.75 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0242 | U | 0.0242 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1D4, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 11:12 |

**J1C1D4**
**1009009-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.277** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1D4, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 15:57 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1D4 (1009009-01) Soil** | | | | | | | | | |
| **%Solids** | **95.2** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **542** | 9.1 | 45.7 | mg/kg dry | 10 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **3.9** B | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 9.1 U | 9.1 | 45.7 | mg/kg dry | 10 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.8 U | 1.8 | 9.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **3.4** B | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **1.11** | 0.09 | 0.46 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.05** B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.52 U | 0.52 | 1.04 | mg/kg dry | 1 | L009117 | 09/05/2010 | 09/05/2010 | SW846 9014 |
| Sulfide, total | 42.0 U | 42.0 | 105 | mg/kg dry | 1 | L009141 | 09/05/2010 | 09/05/2010 | SW846 9034 |
| **pH** | **7.63** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1D4, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/15/2010 15:16 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1D4 (1009009-01) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *104 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/09/2010* | *8015M* |
| Diesel Range Organics | 3500 U | 3500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/09/2010 | 8015M |
| Motor Oil | 10500 U | 10500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/09/2010 | 8015M |
| Kerosene | 10500 U | 10500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/09/2010 | 8015M |

# 618-10-2 Surge Pit Asbestos
# Sample: J1C1J5, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | **245383** |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01116 |
| Date: | 9/8/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L6D421AA** | **L6D5C1AA** | **L6D5J1AA** | **L6D5M1AA** | **L6D531AA** |
| **Client ID** | J1C1K1' | J1C1K2' | J1C1K3' | J1C1K4' | J1C1J5' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | TRA | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | TRA | TRA | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

3

# 618-10-2 Test Pit Radionuclide Analytical Results
# Sample: J1C1F4, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2298**

7889-001 J1C1F4

**D A T A  S H E E T**

| | | | |
|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford SDG K2298 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009022-01 | Client sample id | J1C1F4 |
| Dept sample id | 7889-001 | Location/Matrix | 618-10-2TrenchSoil(Grid) SOLID |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:13 1399 g |
| % solids | 94.7 | Custody/SAF No | RC-154-034 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.08 | 1.8 | 3.13 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.33 | 0.61 | 0.993 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.086 | 0.16 | 0.430 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.610 | 0.26 | 0.194 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.092 | 0.12 | 0.236 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.534 | 0.26 | 0.194 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.031 | 0.12 | 0.345 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.094 | 0.19 | 0.299 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.1 | 0.50 | 0.189 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.024 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.029 | 0.021 | 0.024 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.341 | 0.042 | 0.039 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.593 | 0.078 | 0.072 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.047 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.076 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.061 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.500 | 0.028 | 0.025 | | | GAM |
| Thorium 232 | TH-232 | 0.593 | 0.078 | 0.072 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.115 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.69 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.035 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1F5, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2298

7889-002 J1C1F5

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford SDG K2298 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009022-02 | Client sample id | J1C1F5 |
| Dept sample id | 7889-002 | Location/Matrix | 618-10-2TrenchSoil(Grid) SOLID |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:20 1417 g |
| % solids | 94.6 | Custody/SAF No | RC-154-034 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.231 | 1.7 | 2.93 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.987 | 0.51 | 0.834 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.062 | 0.15 | 0.393 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.509 | 0.26 | 0.195 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.031 | 0.062 | 0.236 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.535 | 0.26 | 0.195 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.026 | 0.10 | 0.247 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.026 | 0.052 | 0.198 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.5 | 0.46 | 0.164 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.019 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.035 | 0.020 | 0.021 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.366 | 0.040 | 0.035 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.600 | 0.079 | 0.077 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.048 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.065 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.068 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.588 | 0.033 | 0.032 | | | GAM |
| Thorium 232 | TH-232 | 0.600 | 0.079 | 0.077 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.133 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.20 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.086 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

## Sample: J1C1F6, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2298

7889-003 J1C1F6

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford SDG K2298 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009022-03 | Client sample id | J1C1F6 |
| Dept sample id | 7889-003 | Location/Matrix | 618-10-2TrenchSoil(Grid) SOLID |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:30 1461 g |
| % solids | 94.1 | Custody/SAF No | RC-154-034 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.08 | 1.7 | 2.98 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.54 | 0.84 | 1.36 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.007 | 0.15 | 0.421 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.897 | 0.32 | 0.202 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.128 | 0.13 | 0.244 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.448 | 0.21 | 0.202 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.026 | 0.15 | 0.283 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.026 | 0.10 | 0.196 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 13.6 | 0.62 | 0.284 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.024 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.025 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.430 | 0.053 | 0.047 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.728 | 0.13 | 0.124 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.061 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.094 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.071 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.587 | 0.031 | 0.028 | | | GAM |
| Thorium 232 | TH-232 | 0.728 | 0.13 | 0.124 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.149 | | U | GAM |
| Uranium 238 | U-238 | U | | 3.18 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.108 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1F7, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2298

7889-004 J1C1F7

DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford | SDG_K2298 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S009022-04 | Client sample id | J1C1F7 | | |
| Dept sample id | 7889-004 | Location/Matrix | 618-10-2TrenchSoil(Grid) | SOLID | |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:39 | 1417 g | |
| % solids | 93.5 | Custody/SAF No | RC-154-034 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.17 | 1.7 | 3.09 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.427 | 0.55 | 0.902 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | 0.016 | 0.17 | 0.394 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.329 | 0.20 | 0.252 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.080 | 0.080 | 0.305 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.526 | 0.27 | 0.252 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.161 | 0.16 | 0.296 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.054 | 0.11 | 0.205 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.2 | 0.72 | 0.297 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.035 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.078 | 0.032 | 0.036 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.425 | 0.061 | 0.062 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.658 | 0.15 | 0.158 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.087 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.122 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.098 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.630 | 0.044 | 0.043 | | | GAM |
| Thorium 232 | TH-232 | 0.658 | 0.15 | 0.158 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.179 | | U | GAM |
| Uranium 238 | U-238 | U | | 4.20 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.261 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1F8, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2298

7889-005 J1C1F8

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford SDG K2298 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009022-05 | Client sample id | J1C1F8 |
| Dept sample id | 7889-005 | Location/Matrix | 618-10-2TrenchSoil(Grid) SOLID |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:39 1443 g |
| % solids | 94.2 | Custody/SAF No | RC-154-034 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -2.83 | 1.8 | 3.32 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.333 | 0.60 | 0.999 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | -0.022 | 0.15 | 0.433 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.439 | 0.22 | 0.210 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.133 | 0.13 | 0.254 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.522 | 0.22 | 0.210 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.030 | 0.12 | 0.289 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.121 | 0.12 | 0.231 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.6 | 0.70 | 0.250 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.025 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.059 | 0.025 | 0.029 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.390 | 0.045 | 0.042 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.674 | 0.11 | 0.104 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.068 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.077 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.067 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.609 | 0.035 | 0.031 | | | GAM |
| Thorium 232 | TH-232 | 0.674 | 0.11 | 0.104 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.176 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.84 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.036 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1F9, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2298

7889-006 J1C1F9

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford SDG K2298 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009022-06 | Client sample id | J1C1F9 |
| Dept sample id | 7889-006 | Location/Matrix | 618-10-2TrenchSoil(Grid) SOLID |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:48 1386 g |
| % solids | 94.7 | Custody/SAF No | RC-154-034 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.642 | 1.7 | 2.91 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.469 | 0.76 | 1.25 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | -0.100 | 0.13 | 0.385 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.596 | 0.27 | 0.253 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.080 | 0.081 | 0.307 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.629 | 0.27 | 0.253 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.029 | 0.17 | 0.383 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.029 | 0.11 | 0.218 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 13.0 | 0.50 | 0.225 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.019 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.052 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.365 | 0.050 | 0.045 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.746 | 0.099 | 0.082 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.055 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.062 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.075 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.608 | 0.035 | 0.031 | | | GAM |
| Thorium 232 | TH-232 | 0.746 | 0.099 | 0.082 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.135 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.48 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.146 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

**DATA SHEETS**
Page 6
**SUMMARY DATA SECTION**
Page 17

## Sample: J1C1H0, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2298

7889-007 J1C1H0

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7889 | Client/Case no | Hanford SDG K2298 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009022-07 | Client sample id | J1C1H0 |
| Dept sample id | 7889-007 | Location/Matrix | 618-10-2TrenchSoil(Grid) SOLID |
| Received | 09/02/10 | Collected/Weight | 08/27/10 08:58 1442 g |
| % solids | 95.6 | Custody/SAF No | RC-154-034 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.540 | 1.8 | 3.11 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.25 | 0.55 | 0.893 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.021 | 0.15 | 0.419 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.652 | 0.30 | 0.227 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.036 | 0.072 | 0.275 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.919 | 0.36 | 0.227 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.15 | 0.367 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.038 | 0.077 | 0.293 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.9 | 0.47 | 0.207 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.018 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.018 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.383 | 0.040 | 0.038 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.626 | 0.10 | 0.092 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.040 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.064 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.056 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.574 | 0.026 | 0.023 | | | GAM |
| Thorium 232 | TH-232 | 0.626 | 0.10 | 0.092 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.104 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.42 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.032 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

**DATA SHEETS**
Page 7
**SUMMARY DATA SECTION**
Page 18

# 618-10-2 Test Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C1K5, GEA

Apex™

8/30/2010 11:51:27AM Page 1 of 4

Analysis Report for RCF25452

J1C1K5 SAF:RC-154 618-10-2 TRENCH SOIL GRID #1 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25452 |
| Sample Description | : J1C1K5 SAF:RC-154 618-10-2 TRENCH SOIL GRID #1 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.520E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:13:00AM |
| Acquisition Started | : 8/30/2010 10:51:13AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 6058 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.953 | 5.19E+00 | 6.77E-01 | |
| CS-137 | | 0.995 | 4.95E-02 | 2.19E-02 | |
| RA-226d | @ | 0.348 | 1.95E-01 | 3.71E-02 | |
| TH-232d | | 0.598 | 1.78E-01 | 3.57E-02 | |

## Sample: J1C1K6, GEA

Apex™

8/30/2010 11:51:32AM Page 1 of 4

Analysis Report for RCF25453

J1C1K6 SAF:RC-154 618-10-2 TRENCH SOIL GRID #2 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25453 |
| Sample Description | : J1C1K6 SAF:RC-154 618-10-2 TRENCH SOIL GRID #2 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.940E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:20:00AM |
| Acquisition Started | : 8/30/2010 10:51:19AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 6059 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.973 | 5.47E+00 | 6.57E-01 | |
| | PB-212 | | 0.710 | 1.74E-01 | 2.72E-02 | |
| | RA-226d | @ | 0.789 | 1.74E-01 | 2.61E-02 | |
| | TH-232d | | 0.991 | 1.68E-01 | 2.14E-02 | |
| X | U-235 | | 0.537 | | | |

## Sample: J1C1K7, GEA

Apex™

8/30/2010 11:51:41AM Page 1 of 4

Analysis Report for RCF25454

J1C1K7 SAF:RC-154 618-10-2 TRENCH SOIL GRID #3 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25454 |
| Sample Description | : J1C1K7 SAF:RC-154 618-10-2 TRENCH SOIL GRID #3 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.910E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:30:00AM |
| Acquisition Started | : 8/30/2010 10:51:25AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 6060 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.951 | 5.62E+00 | 6.92E-01 | |
| X | EU-155 | | 0.341 | | | |
| | PB-212 | | 0.998 | 1.87E-01 | 2.65E-02 | |
| | RA-226d | @ | 0.786 | 1.77E-01 | 2.74E-02 | |
| | TH-232d | | 0.990 | 1.85E-01 | 2.21E-02 | |

## Sample: J1C1K8, GEA

Apex™

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Analysis Report for RCF25455

J1C1K8 SAF:RC-154 618-10-2 TRENCH SOIL GRID #4 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25455 |
| Sample Description | : J1C1K8 SAF:RC-154 618-10-2 TRENCH SOIL GRID #4 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.890E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:39:00AM |
| Acquisition Started | : 8/30/2010 12:02:32PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3601.0 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 6062 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.983 | 7.32E+00 | 8.17E-01 | |
| RA-226d | @ | 0.714 | 1.97E-01 | 3.28E-02 | |
| TH-232d | | 0.824 | 2.67E-01 | 3.76E-02 | |

## Sample: J1C1K9, GEA

Apex™

8/30/2010 1:02:51PM Page 1 of 4

Analysis Report for RCF25456

J1C1K9 SAF:RC-154 618-10-2 TRENCH SOIL GRID #4D 250g aG JAR

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25456 |
| Sample Description | : J1C1K9 SAF:RC-154 618-10-2 TRENCH SOIL GRID #4D 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.940E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:39:00AM |
| Acquisition Started | : 8/30/2010 12:02:37PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 6063 |

**QUALITATIVE ONLY**

# INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.972 | 7.15E+00 | 7.63E-01 | |
| | PB-212 | | 0.710 | 2.09E-01 | 3.06E-02 | |
| | RA-226d | @ | 0.783 | 1.99E-01 | 3.11E-02 | |
| | TH-232d | | 0.996 | 1.72E-01 | 2.60E-02 | |
| X | U-235 | | 0.547 | | | |

## Sample: J1C1L0, GEA

Apex™

8/30/2010 1:03:00PM Page 1 of 4

Analysis Report for RCF25457

J1C1L0 SAF:RC-154 618-10-2 TRENCH SOIL GRID #5 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25457 |
| Sample Description | : J1C1L0 SAF:RC-154 618-10-2 TRENCH SOIL GRID #5 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.960E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:48:00AM |
| Acquisition Started | : 8/30/2010 12:02:43PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 6064 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.940 | 5.47E+00 | 6.76E-01 | |
| | PB-212 | | 0.710 | 2.06E-01 | 2.91E-02 | |
| | RA-226d | @ | 0.672 | 1.59E-01 | 2.77E-02 | |
| | TH-232d | | 0.989 | 1.99E-01 | 2.89E-02 | |
| X | U-235 | | 0.543 | | | |

## Sample: J1C1L1, GEA

Apex™

8/30/2010 2:38:18PM Page 1 of 4

Analysis Report for RCF25458

J1C1L1 SAF:RC-154 618-10-2 TRENCH SOIL GRID #6 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25458 |
| Sample Description | : J1C1L1 SAF:RC-154 618-10-2 TRENCH SOIL GRID #6 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.610E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/27/2010 8:58:00AM |
| Acquisition Started | : 8/30/2010 1:38:04PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : |
| Live Time | : 3600.0 seconds |
| Real Time | : 3601.0 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 6069 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.981 | 5.76E+00 | 7.34E-01 | |
| PB-212 | | 0.709 | 1.69E-01 | 3.16E-02 | |
| RA-226d | @ | 0.733 | 1.85E-01 | 3.16E-02 | |
| TH-232d | | 0.681 | 2.05E-01 | 3.59E-02 | |
| U-238d | | 0.331 | 2.51E-01 | 1.98E-01 | LMDA 8/30/10 |

# 618-10-2 Test Pit Chemical Analytical Results
# Sample: J1C1F4, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 11:44 |

**J1C1F4**
**1009020-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 6.32 U | 6.32 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **51.1** | 12.6 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 6.32 U | 6.32 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 6.32 U | 6.32 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 10.5 U | 10.5 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 5.27 U | 5.27 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *105 %* | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *95 %* | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *120 %* | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1F5, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 11:44 |

**J1C1F5**
**1009020-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 6.21 | U | 6.21 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 12.4 | U | 12.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 12.4 | U | 12.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.4 | U | 12.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **10.7** | **J** | 12.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 6.21 | U | 6.21 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 10.4 | U | 10.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 10.4 | U | 10.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 10.4 | U | 10.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 6.21 | U | 6.21 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 10.4 | U | 10.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 5.18 | U | 5.18 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *95 %* | | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *94 %* | | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *116 %* | | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1F6, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 11:44 |

**J1C1F6**
**1009020-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 5.69 U | 5.69 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 11.4 U | 11.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 11.4 U | 11.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.4 U | 11.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **69.2** | 11.4 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 5.69 U | 5.69 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 9.48 U | 9.48 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 9.48 U | 9.48 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 9.48 U | 9.48 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 5.69 U | 5.69 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 9.48 U | 9.48 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 4.74 U | 4.74 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *104 %* | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *111 %* | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1F7, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 11:44 |

**J1C1F7**
**1009020-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 5.57 U | 5.57 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 11.1 U | 11.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 11.1 U | 11.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.1 U | 11.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **42.9** | 11.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 5.57 U | 5.57 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 9.28 U | 9.28 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 9.28 U | 9.28 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 9.28 U | 9.28 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 5.57 U | 5.57 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 9.28 U | 9.28 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 4.64 U | 4.64 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *92 %* | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1F8, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 11:44 |

**J1C1F8**
**1009020-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 6.03 U | 6.03 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 12.1 U | 12.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 12.1 U | 12.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.1 U | 12.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **39.4** | 12.1 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 6.03 U | 6.03 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 10.0 U | 10.0 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 10.0 U | 10.0 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 10.0 U | 10.0 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 6.03 U | 6.03 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 10.0 U | 10.0 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 5.02 U | 5.02 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *91 %* | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *114 %* | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1F9, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 11:44 |

**J1C1F9**
**1009020-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 5.88 U | 5.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 11.8 U | 11.8 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 11.8 U | 11.8 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.8 U | 11.8 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **49.3** | 11.8 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 5.88 U | 5.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 9.81 U | 9.81 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 9.81 U | 9.81 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 9.81 U | 9.81 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 5.88 U | 5.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 9.81 U | 9.81 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 4.90 U | 4.90 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *104 %* | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *109 %* | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1H0, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 11:44 |

**J1C1H0**
**1009020-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 5.33 U | 5.33 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 10.7 U | 10.7 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 10.7 U | 10.7 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.7 U | 10.7 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **42.6** | 10.7 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 5.33 U | 5.33 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 8.88 U | 8.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 8.88 U | 8.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 8.88 U | 8.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 5.33 U | 5.33 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 8.88 U | 8.88 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 4.44 U | 4.44 | ug/kg dry | 1 | L009181 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *106 %* | *63-151* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *110 %* | *66-122* | | | *L009181* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1F4, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F4**
**1009020-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 696 U | 696 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1F4, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F4**
**1009020-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1740 | U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 3** | **487** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **23200** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **369** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Alkane 1** | **323** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **71500** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *64 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *78 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *81 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *50 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *99 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F5, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F5**
**1009020-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 697 U | 697 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1F5, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F5**
**1009020-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1740 | U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 4** | **585** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 3** | **602** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **629** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **1300** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **119000** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *83 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *80 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *98 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *105 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *34 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *111 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F6**
**1009020-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1780 U | 1780 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1780 U | 1780 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 713 U | 713 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1780 U | 1780 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1780 U | 1780 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1780 U | 1780 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 356 U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1F6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F6**
**1009020-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1780 | U | 1780 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **373** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **272** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Alkane 1** | **171** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 2** | **68600** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **398** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 356 | U | 356 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *39 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *46 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *45 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *49 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *25 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *60 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F7**
**1009020-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 698 U | 698 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

# Sample: J1C1F7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F7**
**1009020-04 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 2** | **89100** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **535** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 3** | **340** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **193** J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **324** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *67 %* | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *75 %* | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *77 %* | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *49 %* | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *89 %* | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F8, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/20/2010 13:37 |

**J1C1F8**
**1009020-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 690 U | 690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1F8, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/20/2010 13:37 |

**J1C1F8**
**1009020-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1720 U | 1720 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 3** | **234** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **259** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **156** J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 2** | **77200** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **558** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 345 U | 345 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *53 %* | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *62 %* | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *61 %* | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *64 %* | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *39 %* | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *76 %* | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/20/2010 13:37 |

**J1C1F9**
**1009020-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 699 U | 699 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 349 U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1F9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1F9**
**1009020-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1750 | U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 3** | **165** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **188** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **275** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **653** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 2** | **73500** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 349 | U | 349 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *56 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *56 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *64 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *66 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *47 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *81 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1H0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 13:37 |

**J1C1H0**
**1009020-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 691 U | 691 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 346 U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1H0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/20/2010 13:37 |

**J1C1H0**
**1009020-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1730 | U | 1730 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **284** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Trichloro-1-propene** | **190** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **587** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 2** | **79100** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **692** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 346 | U | 346 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *58 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *68 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *65 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *65 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *34 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *83 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F4 – J1C1F6, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 20:08 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1F4 (1009020-01) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *119 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *105 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| **J1C1F5 (1009020-02) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *105 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *106 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| **J1C1F6 (1009020-03) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *121 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *109 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| Aroclor 1016 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |

## Sample: J1C1F7 – J1C1F9, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 20:08 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1F7 (1009020-04) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *114 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *105 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| Aroclor 1016 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.3 U | 13.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| **J1C1F8 (1009020-05) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *118 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/11/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *111 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/11/2010* | *8082* |
| Aroclor 1016 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1221 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1232 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1242 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1248 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1254 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1260 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| **J1C1F9 (1009020-06) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *113 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/11/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *100 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/11/2010* | *8082* |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |

## Sample: J1C1H0, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 20:08 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1H0 (1009020-07) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *101 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/11/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *85 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/11/2010* | *8082* |
| Aroclor 1016 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1221 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1232 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1242 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1248 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1254 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |
| Aroclor 1260 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/11/2010 | 8082 |

## Sample: J1C1F4, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F4**
**1009020-01 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5740** | | 4.18 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.502 | U | 0.502 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **2.81** | | 0.837 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **65.3** | | 0.418 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.240** | | 0.167 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **0.738** | B | 1.67 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.142** | B | 0.167 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **5360** | | 83.7 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **5.33** | | 0.167 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **7.85** | | 1.67 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **11.4** | | 0.837 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **25300** | | 16.7 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **2.71** | | 0.418 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **4030** | | 62.7 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **343** | | 4.18 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.390** | B | 1.67 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **7.22** | | 3.35 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **872** | | 335 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.251 | U | 0.251 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **901** | | 1.67 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.167 | U | 0.167 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **315** | | 41.8 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **74.2** | | 2.09 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **46.6** | | 8.37 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **27.8** | | 4.18 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Mercury | 0.0256 | U | 0.0256 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1F4, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F4**
**1009020-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.288** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Mercury** | **0.0000640** | B | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1F5, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F5**
**1009020-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5720** | | 4.89 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.587 | U | 0.587 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **2.55** | | 0.978 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **63.3** | | 0.489 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.236** | | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **0.708** | B | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.132** | B | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **5070** | | 97.8 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **6.44** | | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **7.03** | | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **10.7** | | 0.978 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **22000** | | 19.6 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **2.80** | | 0.489 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **3730** | | 73.3 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **292** | | 4.89 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.380** | B | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **7.21** | | 3.91 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **870** | | 391 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.293 | U | 0.293 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **352** | | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.196 | U | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **263** | | 48.9 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **63.1** | | 2.44 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **42.2** | | 9.78 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **23.4** | | 4.89 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Mercury** | **0.0113** | B | 0.0257 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1F5, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F5**
**1009020-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.267** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1F6, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F6**
**1009020-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **7570** | | 4.91 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.589 | U | 0.589 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **3.16** | | 0.982 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **76.6** | | 0.491 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.293** | | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **1.25** | B | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.172** | B | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **3350** | | 98.2 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **7.59** | | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **6.23** | | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **9.52** | | 0.982 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **20000** | | 19.6 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **5.49** | | 0.491 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **3430** | | 73.7 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **323** | | 4.91 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.335** | B | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **8.15** | | 3.93 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **1560** | | 393 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.295 | U | 0.295 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **432** | | 1.96 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.196 | U | 0.196 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **203** | | 49.1 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **50.1** | | 2.46 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **43.5** | | 9.82 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **21.9** | | 4.91 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Mercury | 0.0286 | U | 0.0286 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1F6, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F6**
**1009020-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.239** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1F7, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F7**
**1009020-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5630** | | 5.09 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.611 | U | 0.611 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **2.97** | | 1.02 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **68.0** | | 0.509 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.230** | | 0.204 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **0.651** | B | 2.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.138** | B | 0.204 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **4830** | | 102 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **6.85** | | 0.204 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **6.69** | | 2.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **9.57** | | 1.02 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **21200** | | 20.4 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **4.09** | | 0.509 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **3600** | | 76.3 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **292** | | 5.09 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.311** | B | 2.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **7.11** | | 4.07 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **908** | | 407 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.305 | U | 0.305 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **387** | | 2.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.204 | U | 0.204 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **210** | | 50.9 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **60.4** | | 2.54 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **42.0** | | 10.2 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **19.7** | | 5.09 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Mercury | 0.0272 | U | 0.0272 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1F8, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F8**
**1009020-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.253** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1F9, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F9**
**1009020-06 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5940** | | 3.58 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.429 | U | 0.429 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **2.37** | | 0.716 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **70.6** | | 0.358 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.245** | | 0.143 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **0.788** | B | 1.43 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.136** | B | 0.143 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **3770** | | 71.6 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **6.43** | | 0.143 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **7.04** | | 1.43 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **9.90** | | 0.716 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **21600** | | 14.3 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **2.88** | | 0.358 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **3510** | | 53.7 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **335** | | 3.58 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.356** | B | 1.43 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **7.35** | | 2.86 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **976** | | 286 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.215 | U | 0.215 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **282** | | 1.43 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.143 | U | 0.143 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **219** | | 35.8 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **63.9** | | 1.79 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **44.1** | | 7.16 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **22.7** | | 3.58 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Mercury** | **0.0149** | B | 0.0244 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1F7, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F7**
**1009020-04 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.264** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1F8, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F8**
**1009020-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5230** | | 3.53 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.424 | U | 0.424 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **2.47** | | 0.706 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **63.9** | | 0.353 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.216** | | 0.141 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **0.587** | B | 1.41 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.131** | B | 0.141 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **4090** | | 70.6 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **5.73** | | 0.141 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **6.51** | | 1.41 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **10.0** | | 0.706 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **20200** | | 14.1 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **3.01** | | 0.353 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **3330** | | 53.0 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **287** | | 3.53 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.333** | B | 1.41 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **6.93** | | 2.82 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **818** | | 282 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.212 | U | 0.212 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **274** | | 1.41 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.141 | U | 0.141 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **215** | | 35.3 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **61.0** | | 1.77 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **40.8** | | 7.06 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **21.0** | | 3.53 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Mercury | 0.0248 | U | 0.0248 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1F9, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/21/2010 11:36 |

**J1C1F9**
**1009020-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.265** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1H0, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/21/2010 11:36 |

**J1C1H0**
**1009020-07 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5710** | | 5.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Antimony | 0.604 | U | 0.604 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Arsenic** | **2.60** | | 1.01 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Barium** | **56.5** | | 0.504 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Beryllium** | **0.244** | | 0.201 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Boron** | **0.709** | B | 2.01 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cadmium** | **0.142** | B | 0.201 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Calcium** | **4500** | | 101 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Chromium** | **7.48** | | 0.201 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Cobalt** | **7.23** | | 2.01 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Copper** | **9.85** | | 1.01 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Iron** | **23000** | | 20.1 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Lead** | **3.03** | | 0.504 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Magnesium** | **3630** | | 75.5 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Manganese** | **286** | | 5.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Molybdenum** | **0.349** | B | 2.01 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Nickel** | **7.15** | | 4.03 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Potassium** | **943** | | 403 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Selenium | 0.302 | U | 0.302 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Silicon** | **374** | | 2.01 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Silver | 0.201 | U | 0.201 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Sodium** | **230** | | 50.4 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Vanadium** | **67.0** | | 2.52 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zinc** | **43.4** | | 10.1 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| **Zirconium** | **23.2** | | 5.04 | mg/kg dry | 1 | L009159 | 09/14/2010 | 09/16/2010 | 6010B |
| Mercury | 0.0255 | U | 0.0255 | mg/kg dry | 1 | L009196 | 09/16/2010 | 09/20/2010 | 7471A |

## Sample: J1C1H0, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2298<br>Project Manager: Joan Kessner | Reported:<br>09/21/2010 11:36 |

**J1C1H0**
**1009020-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.222** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009211 | 09/16/2010 | 09/17/2010 | 7470 |

## Sample: J1C1F4 - J1C1F5, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 16:05 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C1F4 (1009020-01) Soil** | | | | | | | | | | |
| **%Solids** | **94.9** | | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 1.1 | U | 1.1 | 5.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **244** | | 10.8 | 54.2 | mg/kg dry | 10 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.1** | B | 1.1 | 5.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **3.7** | B | 1.1 | 5.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 10.8 | U | 10.8 | 54.2 | mg/kg dry | 10 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.2 | U | 2.2 | 10.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.2** | B | 1.1 | 5.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **1.01** | | 0.11 | 0.54 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 | U | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 | U | 0.51 | 1.03 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/07/2010 | SW846 9014 |
| Sulfide, total | 42.2 | U | 42.2 | 105 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |
| **pH** | **7.85** | | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F5 (1009020-02) Soil** | | | | | | | | | | |
| **%Solids** | **94.7** | | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 1.1 | U | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **20.3** | | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.1** | B | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **3.7** | B | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.1 | U | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.2 | U | 2.2 | 11.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.9** | B | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **1.01** | | 0.11 | 0.55 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 | U | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.53 | U | 0.53 | 1.05 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/07/2010 | SW846 9014 |
| Sulfide, total | 42.2 | U | 42.2 | 106 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |

# Sample: J1C1F5 - J1C1F7, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 16:05 |

## Wet Chemistry
## Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1F5 (1009020-02) Soil** | | | | | | | | | |
| **pH** | **8.27** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F6 (1009020-03) Soil** | | | | | | | | | |
| **%Solids** | **92.6** | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 1.1 U | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **17.2** | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.1 U | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **9.1** | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.1 U | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | **8.9** B | 2.2 | 11.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Sulfate | 1.1 U | 1.1 | 5.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **2.16** | 0.11 | 0.55 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 U | 0.05 | 0.22 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.52 U | 0.52 | 1.03 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/07/2010 | SW846 9014 |
| Sulfide, total | 43.2 U | 43.2 | 108 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |
| **pH** | **7.71** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F7 (1009020-04) Soil** | | | | | | | | | |
| **%Solids** | **94.5** | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **11.6** | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **10.0** | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 U | 1.9 | 9.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **3.1** B | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **2.37** | 0.09 | 0.47 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 U | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.53 U | 0.53 | 1.05 | mg/kg dry | 1 | L009120 | 09/09/2010 | 09/09/2010 | SW846 9014 |
| Sulfide, total | 42.3 U | 42.3 | 106 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |

# Sample: J1C1F7 - J1C1F9, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 16:05 |

## Wet Chemistry
## Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C1F7 (1009020-04) Soil** | | | | | | | | | | |
| **pH** | **8.23** | | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F8 (1009020-05) Soil** | | | | | | | | | | |
| **%Solids** | **95.7** | | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Chloride | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **2.9** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.0** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.89** | | 0.10 | 0.48 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.20** | B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.52 | U | 0.52 | 1.05 | mg/kg dry | 1 | L009120 | 09/09/2010 | 09/09/2010 | SW846 9014 |
| Sulfide, total | 41.8 | U | 41.8 | 105 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |
| **pH** | **8.41** | | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F9 (1009020-06) Soil** | | | | | | | | | | |
| **%Solids** | **94.4** | | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 1.1 | U | 1.1 | 5.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Chloride | 1.1 | U | 1.1 | 5.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.1 | U | 1.1 | 5.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrate | 1.1 | U | 1.1 | 5.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.1 | U | 1.1 | 5.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | **3.6** | B | 2.1 | 10.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.2** | B | 1.1 | 5.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.72** | | 0.11 | 0.53 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.16** | B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.56 | U | 0.56 | 1.12 | mg/kg dry | 1 | L009120 | 09/09/2010 | 09/09/2010 | SW846 9014 |

## Sample: J1C1F9 - J1C1H0, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 16:05 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1F9 (1009020-06) Soil** | | | | | | | | | |
| Sulfide, total | 42.4 U | 42.4 | 106 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |
| **pH** | **8.09** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1H0 (1009020-07) Soil** | | | | | | | | | |
| **%Solids** | **95.5** | 0.1 | 0.1 | % by Weight | 1 | L009050 | 09/03/2010 | 09/03/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **7.8** | 1.0 | 5.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 5.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **34.1** | 1.0 | 5.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 5.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.1 U | 2.1 | 10.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.8** B | 1.0 | 5.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **7.45** | 0.10 | 0.51 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.16** B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.54 U | 0.54 | 1.08 | mg/kg dry | 1 | L009120 | 09/09/2010 | 09/09/2010 | SW846 9014 |
| Sulfide, total | 41.9 U | 41.9 | 105 | mg/kg dry | 1 | L009144 | 09/09/2010 | 09/09/2010 | SW846 9034 |
| **pH** | **7.87** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1F4 – J1C1F8, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 21:09 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1F4 (1009020-01) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *88 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3380 U | 3380 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 8280 J | 10100 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10100 U | 10100 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1F5 (1009020-02) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *96 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3430 U | 3430 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 135000 | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1F6 (1009020-03) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *88 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3570 U | 3570 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 19300 | 10700 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10700 U | 10700 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1F7 (1009020-04) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *94 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/11/2010* | *8015M* |
| Diesel Range Organics | 3450 U | 3450 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| **Motor Oil** | 37400 | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| **J1C1F8 (1009020-05) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *81 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/11/2010* | *8015M* |
| Diesel Range Organics | 3440 U | 3440 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| **Motor Oil** | 12200 | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |

## Sample: J1C1F9 – J1C1H0, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2298 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 21:09 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1F9 (1009020-06) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *97 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/11/2010* | *8015M* |
| Diesel Range Organics | 3440 U | 3440 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| Motor Oil | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| **J1C1H0 (1009020-07) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *97 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/11/2010* | *8015M* |
| Diesel Range Organics | 3470 U | 3470 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| **Motor Oil** | 11500 | 10400 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |
| Kerosene | 10400 U | 10400 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/11/2010 | 8015M |

# 618-10-2 Test Pit Asbestos
# Sample: J1C1K5 – J1C1L1, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 245382 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01128 |
| Date: | 9/13/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L6FV01AA** | **L6FV21AA** | **L6FV31AA** | **L6FV41AA** | **L6FV61AA** |
| **Client ID** | J1C1K5' | J1C1K6' | J1C1K7' | J1C1K8' | J1C1K9' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | | |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | TRA | TRA | TRA |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected", "TRA" stands for "<1%"

3

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 245382_2 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01128 |
| Date: | 9/13/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L6FV91AA** | **L6FWG1AA** | | | |
| **Client ID** | J1C1L0 | J1C1L1 | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | | | |
| Homogeneous | Y | Y | | | |
| Color | dark brown | dark brown | | | |
| % Visible Fibers | 0 | 0 | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | | | |
| %Amosite | ND | ND | | | |
| %Crocidolite | ND | ND | | | |
| %Tremolite | ND | ND | | | |
| %Actinolite | ND | ND | | | |
| % Anthophylite | ND | ND | | | |
| **% Total Asbestos** | **ND** | **ND** | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | | | |
| % Glass Fibers | ND | ND | | | |
| % Other fibers | ND | ND | | | |
| % Non-fibrous | 100 | 100 | | | |

***Comments:***

**Note:** "ND" stands for "None Detected", "TRA" stands for "<1%"

4

# LABORATORY DATA RESULTS

## 618-10-8 TEST PIT

## 618-10-8 Surge Pit Radionuclide Analytical Results
## Sample: J1C058, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2180**

7871-002 J1C058

**D A T A  S H E E T**

| | | | |
|---|---|---|---|
| SDG | 7871 | Client/Case no | Hanford SDG K2180 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008102-02 | Client sample id | J1C058 |
| Dept sample id | 7871-002 | Location/Matrix | 618-10-1 & 8 Surge Pit SOLID |
| Received | 08/11/10 | Collected/Weight | 08/09/10 08:50 796 g |
| % solids | 96.7 | Custody/SAF No | RC-154-016 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 1.16 | 1.6 | 2.70 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.443 | 0.36 | 0.585 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | 0.241 | 0.26 | 0.481 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 1.14 | 0.34 | 0.181 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.143 | 0.12 | 0.219 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.852 | 0.29 | 0.181 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.120 | 0.24 | 0.441 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.279 | 0.24 | 0.305 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.7 | 0.47 | 0.171 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.018 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.019 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.376 | 0.037 | 0.033 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.569 | 0.086 | 0.080 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.057 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.061 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.071 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.594 | 0.032 | 0.030 | | | GAM |
| Thorium 232 | TH-232 | 0.569 | 0.086 | 0.080 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.146 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.41 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.087 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

**DATA SHEETS**
Page 2
**SUMMARY DATA SECTION**
Page 12

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 08/26/10 |

## Sample: J1C059, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2181

7872-001 J1C059

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7872 | Client/Case no | Hanford SDG K2181 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008106-01 | Client sample id | J1C059 |
| Dept sample id | 7872-001 | Location/Matrix | 618108 SurgePitSoilPile SOLID |
| Received | 08/12/10 | Collected/Weight | 08/10/10 07:35 1327 g |
| % solids | 95.1 | Custody/SAF No | RC-154-018 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 1.08 | 1.5 | 2.54 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.17 | 0.38 | 0.607 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.112 | 0.24 | 0.391 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.466 | 0.18 | 0.137 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.022 | 0.043 | 0.166 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.466 | 0.18 | 0.137 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.081 | 0.16 | 0.446 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | -0.040 | 0.081 | 0.309 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.2 | 0.57 | 0.230 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.021 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.063 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.378 | 0.044 | 0.043 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.581 | 0.10 | 0.100 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.056 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.080 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.093 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.500 | 0.029 | 0.026 | | | GAM |
| Thorium 232 | TH-232 | 0.581 | 0.10 | 0.100 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.138 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.96 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.096 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 08/30/10 |

**DATA SHEETS**
Page 1
**SUMMARY DATA SECTION**
Page 11

# 618-10-8 Surge Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C058, GEA

Apex™

8/9/2010 4:51:23PM Page 1 of 4

Analysis Report for RCF25236
J1C058 SAF:RC-154 618-10-8 SURGE PIT SOIL PILE

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25236 |
| Sample Description | : J1C058 SAF:RC-154 618-10-8 SURGE PIT SOIL PILE |
| Sample Type | : 80g pillbox |
| Sample Size | : 6.500E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/9/2010 8:50:46AM |
| Acquisition Started | : 8/9/2010 3:51:10PM |
| Procedure | : 80 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : 80 Gram Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.2 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 80gPB 032610Cal 80399A-238 |
| Sample Number | : 5161 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.999 | 1.45E+01 | 3.02E+00 | |
| PB-212 | | 0.708 | 1.34E+00 | 1.68E-01 | |
| RA-226d | g | 0.615 | 4.91E-01 | 1.30E-01 | |
| TH-232d | | 0.853 | 6.26E-01 | 1.46E-01 | |

## Sample: J1C059, GEA

Apex™

8/10/2010 2:45:01PM Page 1 of 4

Analysis Report for RCF25238

J1C059 SAF:RC-154 618-10-8 SURGE PIT SOIL PILE

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25238 |
| Sample Description | : J1C059 SAF:RC-154 618-10-8 SURGE PIT SOIL PILE |
| Sample Type | : 80g pillbox |
| Sample Size | : 7.000E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/10/2010 7:35:00AM |
| Acquisition Started | : 8/10/2010 1:44:46PM |
| Procedure | : 80 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : 80 Gram Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.5 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/12/2010 |
| Efficiency Calibration Description | : PGTWHITE 80g PB 031210 EffCal SN80399A-238 |
| Sample Number | : 5248 |

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.976 | 1.53E+01 | 2.87E+00 | |
| PB-212 | | 0.709 | 7.33E-01 | 1.38E-01 | |
| RA-226d | @ | 0.674 | 4.68E-01 | 1.21E-01 | |
| TH-232d | | 0.998 | 8.03E-01 | 1.47E-01 | |
| U-235 | | 0.541 | 8.20E-02 | 9.80E-02 | |

MDA 1.57E-01

# 618-10-8 Surge Pit Chemical Analytical Results
# Sample: J1C058, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kestner | 08/27/2010 21:40 |

**J1C058**
**1008092-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1-Dichloroethane | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1-Dichloroethene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloroethane | 5.65 U | 5.65 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloropropane | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 2-Butanone | 11.3 U | 11.3 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 2-Hexanone | 11.3 U | 11.3 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.3 U | 11.3 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Acetone | 11.3 U | 11.3 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Benzene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromodichloromethane | 5.65 U | 5.65 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromoform | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromomethane | 9.41 U | 9.41 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Carbon Disulfide | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Carbon Tetrachloride | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chlorobenzene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloroethane | 9.41 U | 9.41 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloroform | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloromethane | 9.41 U | 9.41 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Dibromochloromethane | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Ethylbenzene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Methylene Chloride | 5.65 U | 5.65 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Styrene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Tetrachloroethene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Toluene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Trichloroethene | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Vinyl chloride | 9.41 U | 9.41 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Xylenes, total | 4.70 U | 4.70 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *86 %* | *63-151* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *88 %* | *68-140* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *106 %* | *66-122* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |

## Sample: J1C059, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2181<br>Project Manager: Joan Kessner | Reported:<br>08/20/2010 08:14 |

**J1C059**
**1008098-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1-Dichloroethane | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,1-Dichloroethene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloroethane | 5.38 | U | 5.38 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 1,2-Dichloropropane | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 2-Butanone | 10.8 | U | 10.8 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 2-Hexanone | 10.8 | U | 10.8 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.8 | U | 10.8 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Acetone | 10.8 | U | 10.8 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| **Benzene** | **1.16** | **J** | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromodichloromethane | 5.38 | U | 5.38 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromoform | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Bromomethane | 8.96 | U | 8.96 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Carbon Disulfide | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Carbon Tetrachloride | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chlorobenzene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloroethane | 8.96 | U | 8.96 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloroform | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Chloromethane | 8.96 | U | 8.96 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Dibromochloromethane | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Ethylbenzene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| **Methylene Chloride** | **2.50** | **J** | 5.38 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Styrene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Tetrachloroethene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Toluene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Trichloroethene | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Vinyl chloride | 8.96 | U | 8.96 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| Xylenes, total | 4.48 | U | 4.48 | ug/kg dry | 1 | L008187 | 08/13/2010 | 08/13/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *90 %* | | *63-151* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *89 %* | | *68-140* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *104 %* | | *66-122* | | | *L008187* | *08/13/2010* | *08/13/2010* | *8260B* |

## Sample: J1C058, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/25/2010 13:45 |

**J1C058**
**1008092-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,2-Dichlorobenzene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,3-Dichlorobenzene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,4-Dichlorobenzene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4,5-Trichlorophenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4,6-Trichlorophenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dichlorophenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dimethylphenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dinitrophenol | 1660 U | 1660 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dinitrotoluene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,6-Dinitrotoluene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Chloronaphthalene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Chlorophenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Methylnaphthalene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Methylphenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Nitroaniline | 1660 U | 1660 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Nitrophenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 664 U | 664 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3-Nitroaniline | 1660 U | 1660 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chloro-3-methylphenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chloroaniline | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Methylphenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3- and/or 4-Methylphenol | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Nitroaniline | 1660 U | 1660 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Nitrophenol | 1660 U | 1660 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Acenaphthene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Acenaphthylene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Anthracene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benz[a]anthracene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[a] pyrene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[b] fluoranthene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[g,h,i] perylene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[k] fluoranthene | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroethyl) ether | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 332 U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |

## Sample: J1C058, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/25/2010 13:45 |

**J1C058**
**1008092-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Bis(2-ethylhexyl) phthalate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Butyl Benzyl Phthalate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Carbazole | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Chrysene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dibenz[a,h]anthracene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dibenzofuran | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Diethyl Phthalate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dimethyl Phthalate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Di-n-butyl Phthalate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Di-n-octyl Phthalate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Fluoranthene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Fluorene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorobenzene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorobutadiene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorocyclopentadiene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachloroethane | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Isophorone | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Naphthalene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Nitrobenzene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| N-Nitrosodiphenylamine | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Pentachlorophenol | 1660 | U | 1660 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Phenanthrene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Phenol | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Pyrene | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Unknown 1** | **647** | B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Alkane 1** | **189** | B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 2** | **43600** | A, B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 1** | **274** | A, B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Tributylphosphate | 332 | U | 332 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *72 %* | | *25-121* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *74 %* | | *24-113* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *70 %* | | *23-120* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-115* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *64 %* | | *19-122* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *125 %* | | *18-137* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |

## Sample: J1C059, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2181 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/25/2010 14:49 |

**J1C059**
**1008098-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,2-Dichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,3-Dichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 1,4-Dichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4,5-Trichlorophenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4,6-Trichlorophenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dichlorophenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dimethylphenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dinitrophenol | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,4-Dinitrotoluene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2,6-Dinitrotoluene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Chloronaphthalene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Chlorophenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Methylnaphthalene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Methylphenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 2-Nitrophenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 676 U | 676 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chloro-3-methylphenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chloroaniline | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 3- and/or 4-Methylphenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Methylphenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| 4-Nitrophenol | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Acenaphthene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Acenaphthylene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Anthracene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benz[a]anthracene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[a] pyrene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[b] fluoranthene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[g,h,i] perylene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Benzo[k] fluoranthene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroethyl) ether | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |

## Sample: J1C059, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2181 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/25/2010 14:49 |

**J1C059**
**1008098-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Bis(2-ethylhexyl) phthalate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Butyl Benzyl Phthalate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Carbazole | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Chrysene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dibenz[a,h]anthracene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dibenzofuran | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Diethyl Phthalate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Dimethyl Phthalate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Di-n-butyl Phthalate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Di-n-octyl Phthalate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Fluoranthene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Fluorene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorobenzene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorobutadiene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachlorocyclopentadiene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Hexachloroethane | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Isophorone | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Naphthalene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Nitrobenzene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| N-Nitrosodiphenylamine | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Pentachlorophenol | 1690 U | 1690 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Phenanthrene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Phenol | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Pyrene | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 1** | **212** A, B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 2** | **32100** A, B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Aldol 3** | **198** A, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Unknown 1** | **440** B, J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| **TIC:Unknown 2** | **687** J | | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| Tributylphosphate | 338 U | 338 | ug/kg dry | 1 | L008175 | 08/17/2010 | 08/20/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *62 %* | *25-121* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *62 %* | *24-113* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *62 %* | *23-120* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *74 %* | *30-115* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *44 %* | *19-122* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *112 %* | *18-137* | | | *L008175* | *08/17/2010* | *08/20/2010* | *8270C* |

## Sample: J1C058, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/24/2010 20:54 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C058 (1008092-02) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *137 %* | *43-144* | | | *1008201* | *08/18/2010* | *08/23/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *140 %* | *52-141* | | | *1008201* | *08/18/2010* | *08/23/2010* | *8082* |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |
| **Aroclor 1248** | 24.9 | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008201 | 08/18/2010 | 08/23/2010 | 8082 |

## Sample: J1C059, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2181 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/24/2010 21:01 |

### J1C059
### 1008098-01 (Soil)

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| Aroclor 1248 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | 1008229 | 08/20/2010 | 08/23/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *85 %* | *43-144* | | | *1008229* | *08/20/2010* | *08/23/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *90 %* | *52-141* | | | *1008229* | *08/20/2010* | *08/23/2010* | *8082* |

## Sample: J1C058, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2180<br>Project Manager: Jean Kessner | Reported:<br>08/27/2010 11:10 |

**J1C058**
**1008092-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4420** | | 4.11 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Antimony** | **0.809** | | 0.493 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Arsenic** | **2.47** | | 0.821 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Barium** | **56.6** | | 0.411 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Beryllium** | **0.145** | B | 0.164 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Boron** | **0.511** | B | 1.64 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cadmium** | **0.0637** | B | 0.164 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Calcium** | **5690** | | 82.1 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Chromium** | **3.73** | | 0.164 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cobalt** | **7.58** | | 1.64 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Copper** | **10.7** | | 0.821 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Iron** | **22200** | | 16.4 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Lead** | **2.69** | | 0.411 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Magnesium** | **3570** | | 61.6 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Manganese** | **292** | | 4.11 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Molybdenum** | **0.443** | B | 1.64 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Nickel** | **5.89** | | 3.29 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Potassium** | **785** | | 329 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Selenium | 0.246 | U | 0.246 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Silicon** | **349** | | 1.64 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Silver | 0.164 | U | 0.164 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Sodium** | **193** | | 41.1 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Vanadium** | **64.3** | | 2.05 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zinc** | **41.7** | | 8.21 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zirconium** | **23.1** | | 4.11 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Mercury | 0.0291 | U | 0.0291 | mg/kg dry | 1 | L008214 | 08/19/2010 | 08/20/2010 | 7471A |

## Sample: J1C058, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2180<br>Project Manager: Joan Kessner | Reported:<br>08/27/2010 11:10 |

**J1C058**
**1008092-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| **Barium** | **0.397** | | 0.00600 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L008279 | 08/25/2010 | 08/26/2010 | 7470 |

## Sample: J1C059, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2181 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/27/2010 12:49 |

**J1C059**
**1008098-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4730** | | 3.82 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Antimony** | **0.720** | | 0.458 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Arsenic** | **2.41** | | 0.764 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Barium** | **56.1** | | 0.382 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Beryllium** | **0.157** | | 0.153 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Boron** | **0.543** | B | 1.53 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cadmium** | **0.0716** | B | 0.153 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Calcium** | **4440** | | 76.4 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Chromium** | **5.91** | | 0.153 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Cobalt** | **7.24** | | 1.53 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Copper** | **12.0** | | 0.764 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Iron** | **20700** | | 15.3 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Lead** | **2.99** | | 0.382 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Magnesium** | **3610** | | 57.3 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Manganese** | **273** | | 3.82 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Molybdenum** | **0.364** | B | 1.53 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Nickel** | **8.99** | | 3.06 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Potassium** | **782** | | 306 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Selenium | 0.229 | U | 0.229 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Silicon** | **409** | | 1.53 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Silver | 0.153 | U | 0.153 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Sodium** | **160** | | 38.2 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Vanadium** | **59.6** | | 1.91 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zinc** | **41.8** | | 7.64 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| **Zirconium** | **21.3** | | 3.82 | mg/kg dry | 1 | L008144 | 08/16/2010 | 08/17/2010 | 6010B |
| Mercury | 0.0240 | U | 0.0240 | mg/kg dry | 1 | L008249 | 08/24/2010 | 08/25/2010 | 7471A |

## Sample: J1C059, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2181<br>Project Manager: Joan Kessner | Reported:<br>08/27/2010 12:49 |

**J1C059**
**1008098-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| **Barium** | **0.275** | | 0.00600 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L008258 | 08/24/2010 | 08/26/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L008279 | 08/25/2010 | 08/26/2010 | 7470 |

## Sample: J1C058, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 14:23 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C058 (1008092-02) Soil** | | | | | | | | | |
| **%Solids** | 96.6 | | 0.1 | % by Weight | 1 | L008169 | 08/16/2010 | 08/16/2010 | EPA 160.6 |
| Bromide | 2.5 | U | 2.5 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Chloride** | 4330 | D | 1240 | mg/kg dry | 500 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Fluoride | 2.5 | U | 2.5 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate** | 10.8 | | 2.5 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Nitrite | 1240 | U | 1240 | mg/kg dry | 500 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.5 | U | 2.5 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Sulfate** | 5.0 | | 2.5 | mg/kg dry | 1 | L008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 2.33 | | 0.20 | mg/kg dry | 1 | L008315 | 08/26/2010 | 08/28/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.17 | B | 0.21 | mg/kg dry | 1 | L008232 | 08/22/2010 | 08/22/2010 | SW846 7196A |
| Cyanide | 0.50 | U | 0.50 | mg/kg dry | 1 | L008139 | 08/12/2010 | 08/12/2010 | SW846 9014 |
| **Sulfide, total** | 8.65 | B | 20.7 | mg/kg dry | 1 | L008231 | 08/22/2010 | 08/22/2010 | SW846 9034 |
| **pH** | 7.39 | | 0.10 | pH Units | 1 | L008298 | 08/25/2010 | 08/25/2010 | SW846 9045D |

## Sample: J1C059, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2820 Fermi Avenue | Project Number: K2181 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 13:14 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C059 (1008098-01) Soil** | | | | | | | | | |
| **%Solids** | 96.2 | | 0.1 | % by Weight | 1 | 1008211 | 08/18/2010 | 08/18/2010 | EPA 160.6 |
| Bromide | 2.3 | U | 2.3 | mg/kg dry | 1 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Chloride** | 821 | D | 58.0 | mg/kg dry | 25 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Fluoride** | 0.7 | B | 2.3 | mg/kg dry | 1 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate** | 1.9 | B | 2.3 | mg/kg dry | 1 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Nitrite | 2.3 | U | 2.3 | mg/kg dry | 1 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.3 | U | 2.3 | mg/kg dry | 1 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Sulfate** | 2.9 | | 2.3 | mg/kg dry | 1 | 1008316 | 08/26/2010 | 08/27/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | 0.61 | | 0.19 | mg/kg dry | 1 | 1008315 | 08/26/2010 | 08/27/2010 | EPA 353.2 |
| **Hexavalent Chromium** | 0.15 | B | 0.21 | mg/kg dry | 1 | 1008232 | 08/22/2010 | 08/22/2010 | SW846 7196A |
| Cyanide | 1.03 | U | 1.03 | mg/kg dry | 1 | 1008295 | 08/23/2010 | 08/23/2010 | SW846 9014 |
| Sulfide, total | 20.8 | U | 20.8 | mg/kg dry | 1 | 1008314 | 08/26/2010 | 08/26/2010 | SW846 9034 |
| **pH** | 7.77 | | 0.10 | pH Units | 1 | 1008298 | 08/25/2010 | 08/25/2010 | SW846 9045D |

## Sample: J1C058, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2180 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/29/2010 07:59 |

**Extractable Petroleum Hydrocarbons by SW846 8015**
**Lionville Laboratory**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C058 (1008092-02) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *85 %* | *39-129* | | | *L008165* | *08/17/2010* | *08/25/2010* | *8015M* |
| Diesel Range Organics | 3370 U | 3370 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/25/2010 | 8015M |
| Motor Oil | 10100 U | 10100 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/25/2010 | 8015M |
| Kerosene | 10100 U | 10100 | ug/kg dry | 1 | L008165 | 08/17/2010 | 08/27/2010 | 8015M |

## Sample: J1C059, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2181 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/28/2010 15:22 |

**J1C059**
**1008098-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3340 U | 3340 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/27/2010 | 8015M |
| Motor Oil | 10000 U | 10000 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/27/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *79 %* | *39-129* | | | *L008246* | *08/23/2010* | *08/27/2010* | *8015M* |
| Kerosene | 10000 U | 10000 | ug/kg dry | 1 | L008246 | 08/23/2010 | 08/27/2010 | 8015M |

# 618-10-8 Surge Pit Asbestos
# Sample: J1C064 and J1C065*, Asbestos

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 229181 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01049 |
| Date: | 8/17/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5ERC1AA** | **L5ERG1AA** | | | |
| **Client ID** | J1C063 | J1C064 | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | | | |
| Homogeneous | Y | Y | | | |
| Color | brown/black | brown/black | | | |
| % Visible Fibers | TRA | 0 | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | | | |
| %Amosite | TRA | ND | | | |
| %Crocidolite | ND | ND | | | |
| %Tremolite | ND | ND | | | |
| %Actinolite | ND | ND | | | |
| % Anthophylite | ND | ND | | | |
| **% Total Asbestos** | **TRA** | **ND** | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | | | |
| % Glass Fibers | ND | ND | | | |
| % Other fibers | ND | ND | | | |
| % Non-fibrous | 100 | 100 | | | |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 225263 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01059 |
| Date: | 8/18/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5GK01AA** | | | | |
| **Client ID** | J1C065 | | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | | | | |
| Homogeneous | Y | | | | |
| Color | brown/black | | | | |
| % Visible Fibers | 0 | | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | | | | |
| %Amosite | ND | | | | |
| %Crocidolite | ND | | | | |
| %Tremolite | ND | | | | |
| %Actinolite | ND | | | | |
| % Anthophylite | ND | | | | |
| **% Total Asbestos** | **ND** | | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | | | | |
| % Glass Fibers | ND | | | | |
| % Other fibers | ND | | | | |
| % Non-fibrous | 100 | | | | |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

# 618-10-8 Test Pit Radionuclide Analytical Results
# Sample: J1C099, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-001 J1C099

DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford | SDG K2235 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S008225-01 | Client sample id | J1C099 | | |
| Dept sample id | 7881-001 | Location/Matrix | 618-10-8 Trench Soil | SOLID | |
| Received | 08/26/10 | Collected/Weight | 08/20/10 12:05 | 1278 g | |
| % solids | 95.0 | Custody/SAF No | RC-154-024 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.412 | 1.7 | 2.85 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.22 | 0.46 | 0.747 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.023 | 0.15 | 0.422 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.506 | 0.27 | 0.255 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.161 | 0.19 | 0.247 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.373 | 0.22 | 0.204 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.212 | 0.14 | 0.270 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.071 | 0.270 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.2 | 0.47 | 0.146 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.019 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.024 | 0.018 | 0.022 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.367 | 0.039 | 0.035 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.532 | 0.078 | 0.070 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.050 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.066 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.070 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.551 | 0.031 | 0.025 | | | GAM |
| Thorium 232 | TH-232 | 0.532 | 0.078 | 0.070 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.138 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.13 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.149 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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**SUMMARY DATA SECTION**
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## Sample: J1C0B0, Radionuclides

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K2235

7881-002 J1C0B0

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-02 | Client sample id | J1C0B0 |
| Dept sample id | 7881-002 | Location/Matrix | 618-10-8 Trench Soil SOLID |
| Received | 08/26/10 | Collected/Weight | 08/20/10 12:15 1362 g |
| % solids | 94.6 | Custody/SAF No | RC-154-024 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.225 | 1.6 | 2.81 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.46 | 0.48 | 0.774 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.077 | 0.15 | 0.405 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.392 | 0.20 | 0.250 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.158 | 0.16 | 0.302 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.457 | 0.26 | 0.250 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.040 | 0.081 | 0.309 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.363 | 0.24 | 0.309 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 11.4 | 0.45 | 0.129 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.017 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.017 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.351 | 0.040 | 0.038 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.488 | 0.085 | 0.085 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.049 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.059 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.065 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.492 | 0.030 | 0.028 | | | GAM |
| Thorium 232 | TH-232 | 0.488 | 0.085 | 0.085 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.129 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.15 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.073 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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**SUMMARY DATA SECTION**
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## Sample: J1C0B1, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-003 J1C0B1

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-03 | Client sample id | J1C0B1 |
| Dept sample id | 7881-003 | Location/Matrix | 618-10-8 Trench Soil SOLID |
| Received | 08/26/10 | Collected/Weight | 08/20/10 12:25 1399 g |
| % solids | 93.6 | Custody/SAF No | RC-154-024 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.593 | 1.6 | 2.85 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.03 | 0.47 | 0.757 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.038 | 0.19 | 0.418 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.335 | 0.25 | 0.233 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.037 | 0.074 | 0.282 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.426 | 0.25 | 0.233 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.079 | 0.16 | 0.303 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.079 | 0.303 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.1 | 0.56 | 0.247 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.025 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.408 | 0.028 | 0.020 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.334 | 0.042 | 0.040 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.579 | 0.096 | 0.096 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.056 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.085 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.076 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.500 | 0.030 | 0.028 | | | GAM |
| Thorium 232 | TH-232 | 0.579 | 0.096 | 0.096 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.142 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.91 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.102 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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## Sample: J1C0B2, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-004 J1C0B2

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-04 | Client sample id | J1C0B2 |
| Dept sample id | 7881-004 | Location/Matrix | 618-10-8 Trench Soil SOLID |
| Received | 08/26/10 | Collected/Weight | 08/20/10 12:45 1365 g |
| % solids | 94.8 | Custody/SAF No | RC-154-024 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.514 | 1.7 | 2.92 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.26 | 0.48 | 0.769 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.072 | 0.16 | 0.419 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.846 | 0.35 | 0.259 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.082 | 0.082 | 0.313 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.508 | 0.27 | 0.259 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.035 | 0.14 | 0.272 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.071 | 0.272 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.2 | 0.55 | 0.240 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.023 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.034 | 0.020 | 0.025 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.359 | 0.036 | 0.032 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.537 | 0.11 | 0.107 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.052 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.081 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.061 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.517 | 0.027 | 0.023 | | | GAM |
| Thorium 232 | TH-232 | 0.537 | 0.11 | 0.107 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.124 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.79 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.036 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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## Sample: J1C0B3, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-005 J1C0B3

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-05 | Client sample id | J1C0B3 |
| Dept sample id | 7881-005 | Location/Matrix | 618-10-8 Trench Soil SOLID |
| Received | 08/26/10 | Collected/Weight | 08/20/10 12:55 1424 g |
| % solids | 93.8 | Custody/SAF No | RC-154-024 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.171 | 1.5 | 2.66 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.08 | 0.46 | 0.736 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.013 | 0.13 | 0.369 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.663 | 0.32 | 0.242 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.153 | 0.15 | 0.292 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.947 | 0.33 | 0.242 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.030 | 0.061 | 0.233 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.030 | 0.12 | 0.292 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.2 | 0.42 | 0.152 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.018 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.020 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.376 | 0.040 | 0.037 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.624 | 0.084 | 0.078 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.047 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.057 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.064 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.560 | 0.028 | 0.024 | | | GAM |
| Thorium 232 | TH-232 | 0.624 | 0.084 | 0.078 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.128 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.03 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.137 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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## Sample: J1C0B4, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2235**

7881-006 J1C0B4

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-06 | Client sample id | J1C0B4 |
| Dept sample id | 7881-006 | Location/Matrix | 618-10-8 Trench Soil SOLID |
| Received | 08/26/10 | Collected/Weight | 08/20/10 13:05 1440 g |
| % solids | 92.8 | Custody/SAF No | RC-154-024 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.212 | 1.5 | 2.65 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.08 | 0.45 | 0.720 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.114 | 0.19 | 0.390 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.745 | 0.27 | 0.204 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.032 | 0.064 | 0.246 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.905 | 0.33 | 0.204 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.10 | 0.242 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.228 | 0.15 | 0.193 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 12.4 | 0.43 | 0.156 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.015 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.346 | 0.025 | 0.021 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.366 | 0.033 | 0.030 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.639 | 0.087 | 0.084 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.047 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.055 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.065 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.593 | 0.029 | 0.027 | | | GAM |
| Thorium 232 | TH-232 | 0.639 | 0.087 | 0.084 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.125 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.20 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.074 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

**DATA SHEETS**
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**SUMMARY DATA SECTION**
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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

## Sample: J1C0C1, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2235**

7881-007 J1C0C1

**D A T A  S H E E T**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-07 | Client sample id | J1C0C1 |
| Dept sample id | 7881-007 | Location/Matrix | 618-10-8 Trench Soil SOLID |
| Received | 08/26/10 | Collected/Weight | 08/20/10 12:25 1469 g |
| % solids | 93.8 | Custody/SAF No | RC-154-024 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.608 | 1.6 | 2.71 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.899 | 0.46 | 0.748 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.033 | 0.15 | 0.391 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.664 | 0.30 | 0.282 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.179 | 0.18 | 0.342 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.406 | 0.22 | 0.282 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.13 | 0.319 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.200 | 0.13 | 0.254 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.4 | 0.55 | 0.207 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.023 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.338 | 0.030 | 0.026 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.343 | 0.045 | 0.044 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.513 | 0.12 | 0.116 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.054 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.079 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.090 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.506 | 0.029 | 0.026 | | | GAM |
| Thorium 232 | TH-232 | 0.513 | 0.12 | 0.116 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.136 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.68 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.099 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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**SUMMARY DATA SECTION**
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# 618-10-8 Test Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C099, GEA

Apex™

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Analysis Report for RCF25351

J1C099 SAF:RC-154 618-10-8 TRENCH SOIL GRID #1 250g aG

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25351 |
| Sample Description | : J1C099 SAF:RC-154 618-10-8 TRENCH SOIL GRID #1 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 4.030E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 12:05:00PM |
| Acquisition Started | : 8/24/2010 7:54:40AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5721 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.991 | 4.78E+00 | 6.25E-01 | |
| PB-212 | | 0.712 | 1.48E-01 | 2.76E-02 | |
| RA-226d | @ | 0.619 | 1.59E-01 | 3.17E-02 | |
| TH-232d | | 0.427 | 1.75E-01 | 3.53E-02 | |

## Sample: J1C0B0, GEA

Apex™

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Analysis Report for RCF25352

J1C0B0 SAF:RC-154 618-10-8 TRENCH SOIL GRID #2 250g aG

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25352 |
| Sample Description | : J1C0B0 SAF:RC-154 618-10-8 TRENCH SOIL GRID #2 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.460E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 12:15:00PM |
| Acquisition Started | : 8/24/2010 7:54:45AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5722 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.993 | 7.00E+00 | 8.09E-01 | |
| X | EU-155 | | 0.360 | | | |
| | PB-212 | | 1.000 | 2.46E-01 | 3.16E-02 | |
| | RA-226d | @ | 0.786 | 2.30E-01 | 3.34E-02 | |
| | TH-232d | | 0.852 | 1.88E-01 | 3.37E-02 | |

## Sample: J1C0B1, GEA

Apex™

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Analysis Report for RCF25353

J1C0B1 SAF:RC-154 618-10-8 TRENCH SOIL GRID #3 250g aG

### GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25353 |
| Sample Description | : J1C0B1 SAF RC-154 618-10-8 TRENCH SOIL GRID #3 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.670E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 12:25:00PM |
| Acquisition Started | : 8/24/2010 9:03:24AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5726 |

QUALITATIVE ONLY

### INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.985 | 6.36E+00 | 7.68E-01 | |
| CS-137 | | 1.000 | 8.15E-02 | 2.88E-02 | |
| PB-212 | | 0.712 | 2.47E-01 | 3.67E-02 | |
| RA-226d | a | 0.351 | 2.11E-01 | 4.74E-02 | |
| TH-232d | | 0.879 | 2.47E-01 | 3.99E-02 | |

## Sample: J1C0B2, GEA

Apex

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Analysis Report for RCF25354

J1C0B2 SAF:RC-154 618-10-8 TRENCH SOIL GRID #4 250g aG

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25354 |
| Sample Description | : J1C0B2 SAF:RC-154 618-10-8 TRENCH SOIL GRID #4 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.860E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 12:45:00PM |
| Acquisition Started | : 8/24/2010 9:03:28AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5727 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.988 | 6.20E+00 | 7.28E-01 | |
| | PB-212 | | 0.711 | 2.59E-01 | 3.28E-02 | |
| | RA-226d | @ | 0.996 | 2.28E-01 | 2.69E-02 | |
| | TH-232d | | 0.998 | 2.24E-01 | 2.40E-02 | |
| X | U-235 | | 0.537 | | | |

## Sample: J1C0B3, GEA

Apex

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Analysis Report for RCF25355

J1C0B3 SAF:RC-154 618-10-8 TRENCH SOIL GRID #5 250g aG

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25355 |
| Sample Description | : J1C0B3 SAF:RC-154 618-10-8 TRENCH SOIL GRID #5 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.570E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 12:55:00PM |
| Acquisition Started | : 8/24/2010 10:06:34AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5730 |

QUALITATIVE ONLY

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.981 | 6.33E+00 | 7.94E-01 | |
| PB-212 | | 0.709 | 2.77E-01 | 4.36E-02 | |
| RA-226d | 9 | 0.731 | 2.22E-01 | 3.43E-02 | |
| TH-232d | | 0.746 | 2.42E-01 | 2.55E-02 | |
| U-238d | | 0.321 | 2.92E-01 | 2.62E-01 | |

## Sample: J1C0B4, GEA

Apex™

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Analysis Report for RCF25349

J1C0B4 SAF:RC-154 618-10-8 TRENCH SOIL GRID # 6 250g aG

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25349 |
| Sample Description | : J1C0B4 SAF:RC-154 618-10-8 TRENCH SOIL GRID # 6 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.610E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 1:05:00PM |
| Acquisition Started | : 8/24/2010 6:43:07AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5712 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.993 | 5.92E+00 | 7.49E-01 | |
| CS-137 | | 0.998 | 1.15E-01 | 3.11E-02 | |
| RA-226d | @ | 0.619 | 1.77E-01 | 3.53E-02 | |
| TH-232d | | 0.678 | 2.73E-01 | 3.98E-02 | |

## Sample: J1C0C1, GEA

Apex

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Analysis Report for RCF25350

J1C0C1 SAF:RC-154 618-10-8 TRENCH SOIL GRID # 3D 250g aG

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25350 |
| Sample Description | : J1C0C1 SAF:RC-154 618-10-8 TRENCH SOIL GRID # 3D 250g aG |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.710E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/20/2010 12:25:00PM |
| Acquisition Started | : 8/24/2010 6:43:01AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5711 |

QUALITATIVE ONLY

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.996 | 6.63E+00 | 7.65E-01 | |
| CS-137 | | 0.998 | 1.56E-01 | 3.25E-02 | |
| PB-212 | | 0.711 | 2.54E-01 | 3.33E-02 | |
| RA-226d | @ | 0.788 | 2.40E-01 | 3.15E-02 | |
| TH-232d | | 0.997 | 2.51E-01 | 2.66E-02 | |

# 618-10-8 Test Pit Chemical Analytical Results
# Sample: J1C099, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/07/2010 08:40 |

**J1C099**
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 5.92 | U | 5.92 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 11.8 | U | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 11.8 | U | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.8 | U | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **36.9** | | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 5.92 | U | 5.92 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 9.86 | U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 9.86 | U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 9.86 | U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 5.92 | U | 5.92 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 9.86 | U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 4.93 | U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *106 %* | | *63-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *89 %* | | *68-140* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *112 %* | | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B0, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/07/2010 08:40 |

**J1C0B0**
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 6.39 U | 6.39 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 12.8 U | 12.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 12.8 U | 12.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.8 U | 12.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **41.8** | 12.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 6.39 U | 6.39 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 6.39 U | 6.39 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 10.6 U | 10.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 5.32 U | 5.32 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *103 %* | *63-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B1, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/07/2010 08:40 |

**J1C0B1**
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 5.71 U | 5.71 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 11.4 U | 11.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 11.4 U | 11.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.4 U | 11.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **53.0** | 11.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 5.71 U | 5.71 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 9.51 U | 9.51 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 9.51 U | 9.51 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 9.51 U | 9.51 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 5.71 U | 5.71 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 9.51 U | 9.51 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 4.76 U | 4.76 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *108 %* | *63-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *87 %* | *68-140* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *123 % ** | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B2, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/07/2010 08:40 |

**J1C0B2**
**1008192-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 5.91 U | 5.91 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 11.8 U | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 11.8 U | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.8 U | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **45.7** | 11.8 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 5.91 U | 5.91 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 9.86 U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 9.86 U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 9.86 U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 5.91 U | 5.91 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 9.86 U | 9.86 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 4.93 U | 4.93 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | *65-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *116 %* | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B3, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/07/2010 08:40 |

**J1C0B3**
**1008192-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 5.67 | U | 5.67 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 11.3 | U | 11.3 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 11.3 | U | 11.3 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.3 | U | 11.3 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **64.8** | | 11.3 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 5.67 | U | 5.67 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 9.45 | U | 9.45 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 9.45 | U | 9.45 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 9.45 | U | 9.45 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 5.67 | U | 5.67 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 9.45 | U | 9.45 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 4.73 | U | 4.73 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *108 %* | | *63-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *89 %* | | *68-140* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *121 %* | | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B4, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/07/2010 08:40 |

**J1C0B4**
**1008192-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 6.21 U | 6.21 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 12.4 U | 12.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 12.4 U | 12.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.4 U | 12.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **65.6** | 12.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 6.21 U | 6.21 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 10.4 U | 10.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 10.4 U | 10.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 10.4 U | 10.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 6.21 U | 6.21 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 10.4 U | 10.4 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 5.18 U | 5.18 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *106 %* | *63-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *88 %* | *68-139* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0C1, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/07/2010 08:40 |

**J1C0C1**
**1008192-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 6.30 U | 6.30 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **52.0** | 12.6 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 6.30 U | 6.30 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| **Methylene Chloride** | **3.46** *J* | 6.30 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 10.5 U | 10.5 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 5.25 U | 5.25 | ug/kg dry | 1 | L009034 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *104 %* | *63-151* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *87 %* | *63-140* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | *66-122* | | | *L009034* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C099, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C099**
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 673 U | 673 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C099, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 09:08 |

**J1C099**
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 673 U | 673 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C099, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C099**
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1680 U | 1680 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **825** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Trichloro-1-propene** | **582** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **38000** A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 336 U | 336 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *63 %* | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *64 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *72 %* | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *79 %* | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *56 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *98 %* | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fernol Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B0**
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 684 U | 684 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-5041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Keisner | 09/13/2010 09:08 |

**J1C0B0**
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1710 | U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **1780** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Trichloro-1-propene** | **141** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **2250** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 2** | **73000** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **479** | A, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *87 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *73 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *83 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *41 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *117 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B1, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B1**
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 3330 U | 3330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 3330 U | 3330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 1330 U | 1330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 3330 U | 3330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 3330 U | 3330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 3330 U | 3330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B1, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B1**
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 3330 U | 3330 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **11900** B, J, D | | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **75100** A, B, J, D | | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 666 U | 666 | ug/kg dry | 2 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *75 %* | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *92 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *82 %* | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *103 %* | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *48 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *113 %* | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B2, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B2**
**1008192-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1660 | U | 1660 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1660 | U | 1660 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 662 | U | 662 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1660 | U | 1660 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1660 | U | 1660 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1660 | U | 1660 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B2, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 09:08 |

**J1C0B2**
**1008192-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1660 | U | 1660 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **29400** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **2650** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **328** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 331 | U | 331 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *85 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *74 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *53 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *74 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *107 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B3, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B3**
**1008192-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 685 U | 685 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 342 U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B3, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B3**
**1008192-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **Chrysene** | **79.0** | **J** | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1710 | U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **12700** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **187** | A, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 2** | **62400** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 342 | U | 342 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *77 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *90 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *78 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *91 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *66 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *102 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B4, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B4**
**1008192-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 695 U | 695 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B4, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2233 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0B4**
**1008192-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1740 | U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **4940** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **178** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **26800** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 347 | U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *91 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *103 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *89 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *98 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *101 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *109 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0C1, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 09/13/2010 09:08 |

**J1C0C1**

**1008192-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 688 U | 688 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Anthracene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 344 U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |

## Sample: J1C0C1, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 09:08 |

**J1C0C1**
**1008192-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Carbazole | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| **Chrysene** | **58.5** | J | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Fluorene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Isophorone | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Naphthalene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1720 | U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Phenol | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Pyrene | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 3** | **896** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **581** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **738** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 4** | **935** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **106000** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 344 | U | 344 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *67 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *71 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *72 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *60 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *41 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *85 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/09/2010* | *8270C* |

## Sample: J1C099 – J1C0B1, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/06/2010 07:09 |

### J1C099
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1254 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *104 %* | *43-144* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *109 %* | *52-141* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |

### J1C0B0
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *109 %* | *43-144* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *112 %* | *52-141* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |

### J1C0B1
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| **Aroclor 1254** | **5.41 J** | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *86 %* | *43-144* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *115 %* | *52-141* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |

## Sample: J1C0B2 – J1C0B4, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/06/2010 07:09 |

### J1C0B2
1008192-04 (Soil)

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1254 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 13.1 U | 13.1 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *106 %* | *43-144* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *120 %* | *52-141* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |

### J1C0B3
1008192-05 (Soil)

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *86 %* | *43-144* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *107 %* | *52-141* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |

### J1C0B4
1008192-06 (Soil)

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| Aroclor 1254 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 14.1 U | 14.1 | ug/kg dry | 1 | L008309 | 08/27/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *77 %* | *43-144* | | | *L008309* | *08/27/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *91 %* | *52-141* | | | *L008309* | *08/27/2010* | *09/01/2010* | *8082* |

## Sample: J1C0C1, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/06/2010 07:09 |

**J1C0C1**
**1008192-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| **Aroclor 1254** | **5.27 J** | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 09/01/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *89 %* | *43-144* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *113 %* | *52-141* | | | *L008288* | *08/26/2010* | *09/01/2010* | *8082* |

## Sample: J1C099, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C099**
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5540** | | 3.48 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.487** | | 0.418 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.50** | | 0.697 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **58.9** | | 0.348 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.231** | | 0.139 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.662** | B | 1.39 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0859** | B | 0.139 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **6010** | | 69.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **5.10** | | 0.139 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.05** | | 1.39 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.7** | | 0.697 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **24300** | | 13.9 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.77** | | 0.348 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **4110** | | 52.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **317** | | 3.48 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.560** | B | 1.39 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **7.57** | | 2.79 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **753** | | 279 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.209 | U | 0.209 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **863** | | 1.39 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.139 | U | 0.139 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **341** | | 34.8 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **74.4** | | 1.74 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **44.5** | | 6.97 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **27.4** | | 3.48 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0304 | U | 0.0304 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C099, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C099**
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.304** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B0, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 09/14/2010 07:49 |

**J1C0B0**
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4420** | | 3.84 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.427** | B | 0.460 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **1.79** | | 0.767 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **58.2** | | 0.384 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.186** | | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.515** | B | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0839** | B | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **6680** | | 76.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **3.93** | | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.16** | | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **12.1** | | 0.767 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **23300** | | 15.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.24** | | 0.384 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3730** | | 57.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **277** | | 3.84 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.517** | B | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **6.95** | | 3.07 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **680** | | 307 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.230 | U | 0.230 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **469** | | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.153 | U | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **337** | | 38.4 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **71.2** | | 1.92 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **45.3** | | 7.67 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **29.0** | | 3.84 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0313 | U | 0.0313 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B0, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B0**
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.351** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Chromium** | **0.00689** | B | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B1, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B1**
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5330** | | 3.37 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.364** | B | 0.405 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.30** | | 0.674 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **59.5** | | 0.337 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.220** | | 0.135 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.794** | B | 1.35 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0826** | B | 0.135 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **4820** | | 67.4 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **4.49** | | 0.135 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **6.95** | | 1.35 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.8** | | 0.674 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **23700** | | 13.5 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **4.15** | | 0.337 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3840** | | 50.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **298** | | 3.37 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.482** | B | 1.35 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Nickel | **7.31** | | 2.70 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **741** | | 270 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.202 | U | 0.202 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **575** | | 1.35 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.135 | U | 0.135 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **311** | | 33.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **72.5** | | 1.69 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **46.0** | | 6.74 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **26.4** | | 3.37 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0282 | U | 0.0282 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B1, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B1**
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.293** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B2, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B2**
**1008192-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5520** | | 4.43 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.440** | B | 0.531 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.44** | | 0.885 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **64.1** | | 0.443 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.230** | | 0.177 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.680** | B | 1.77 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0847** | B | 0.177 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **5320** | | 88.5 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **5.52** | | 0.177 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.49** | | 1.77 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **13.3** | | 0.885 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **24400** | | 17.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **3.25** | | 0.443 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **4050** | | 66.4 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **324** | | 4.43 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.474** | B | 1.77 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **7.73** | | 3.54 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **748** | | 354 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.266 | U | 0.266 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **678** | | 1.77 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.177 | U | 0.177 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **325** | | 44.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **72.3** | | 2.21 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **46.1** | | 8.85 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **28.0** | | 4.43 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0313 | U | 0.0313 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B2, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B2**
**1008192-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.311** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/10/2010 | 7470 |

## Sample: J1C0B3, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B3**
**1008192-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5040** | | 3.68 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.307** | B | 0.441 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **3.12** | | 0.735 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **57.1** | | 0.368 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.212** | | 0.147 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.586** | B | 1.47 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0772** | B | 0.147 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **5040** | | 73.5 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **4.39** | | 0.147 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **6.69** | | 1.47 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.0** | | 0.735 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **22700** | | 14.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.80** | | 0.368 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3600** | | 55.1 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **290** | | 3.68 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.429** | B | 1.47 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **6.32** | | 2.94 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **717** | | 294 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.221 | U | 0.221 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **653** | | 1.47 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.147 | U | 0.147 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **254** | | 36.8 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **68.1** | | 1.84 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **44.4** | | 7.35 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **24.5** | | 3.68 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0298 | U | 0.0298 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B3, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B3**
**1008192-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.303** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/10/2010 | 7470 |

## Sample: J1C0B4, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B4**
**1008192-06 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5250** | | 4.41 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.529** | B | 0.529 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.44** | | 0.882 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **62.5** | | 0.441 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.227** | | 0.176 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.683** | B | 1.76 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0921** | B | 0.176 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **4720** | | 88.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **6.82** | | 0.176 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.16** | | 1.76 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **13.1** | | 0.882 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **22600** | | 17.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **3.85** | | 0.441 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3590** | | 66.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **317** | | 4.41 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.452** | B | 1.76 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **7.98** | | 3.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **766** | | 353 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.265 | U | 0.265 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **457** | | 1.76 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.176 | U | 0.176 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **261** | | 44.1 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **66.3** | | 2.21 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **43.9** | | 8.82 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **24.1** | | 4.41 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0285 | U | 0.0285 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B4, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0B4**
**1008192-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.372** | | 0.03600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/10/2010 | 7470 |

## Sample: J1C0C1, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0C1**
**1008192-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5120** | | 5.25 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.445** | B | 0.630 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **3.04** | | 1.05 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **63.1** | | 0.525 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.226** | | 0.210 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.823** | B | 2.10 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0989** | B | 0.210 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **9770** | | 105 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **6.25** | | 0.210 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.88** | | 2.10 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **12.4** | | 1.05 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **24900** | | 21.0 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **5.40** | | 0.525 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3950** | | 78.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **329** | | 5.25 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.471** | B | 2.10 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **9.07** | | 4.20 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **723** | | 420 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.315 | U | 0.315 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **503** | | 2.10 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.210 | U | 0.210 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **276** | | 52.5 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **74.1** | | 2.62 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **49.0** | | 10.5 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **26.2** | | 5.25 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0292 | U | 0.0292 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0C1, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:49 |

**J1C0C1**
**1008192-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.306** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/10/2010 | 7470 |

# Sample: J1C099 - J1C0B0, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 18:00 |

## Wet Chemistry
## Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C099 (1008192-01) Soil** | | | | | | | | | | |
| **%Solids** | **95.7** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 0.9 | U | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **622** | | 18.4 | 91.9 | mg/kg dry | 20 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 | U | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **2.5** | B | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 | U | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.8 | U | 1.8 | 9.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **1.9** | B | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.74** | | 0.10 | 0.49 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.11** | | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 | U | 0.51 | 1.03 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 41.8 | U | 41.8 | 105 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **7.59** | | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B0 (1008192-02) Soil** | | | | | | | | | | |
| **%Solids** | **95.8** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 0.9 | U | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **906** | | 23.7 | 118 | mg/kg dry | 25 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 | U | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.4** | B | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 | U | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.5 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.2** | B | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.42** | B | 0.10 | 0.49 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.06** | | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 | U | 0.51 | 1.02 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |

## Sample: J1C0B0 - J1C0B2, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 18:00 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C0B0 (1008192-02) Soil** | | | | | | | | | | |
| Sulfide, total | 41.7 | U | 41.7 | 104 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **7.77** | | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B1 (1008192-03) Soil** | | | | | | | | | | |
| **%Solids** | **93.9** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 0.9 | U | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **12.2** | | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 | U | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.5** | B | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 | U | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.3 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.7** | B | 0.9 | 4.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.45** | B | 0.09 | 0.46 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.10** | | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 | U | 0.51 | 1.02 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 42.6 | U | 42.6 | 107 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **8.41** | | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B2 (1008192-04) Soil** | | | | | | | | | | |
| **%Solids** | **95.7** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **9.5** | | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.3** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.7 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **3.1** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.42** | B | 0.09 | 0.47 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.18** | | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |

## Sample: J1C0B2 - J1C0B4, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Keasner | Reported:<br>09/15/2010 18:00 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C0B2 (1008192-04) Soil** | | | | | | | | | |
| Cyanide (total) | 0.51 U | 0.51 | 1.03 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 41.8 U | 41.8 | 104 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **8.47** | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B3 (1008192-05) Soil** | | | | | | | | | |
| **%Solids** | **94.5** | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **8.9** | 1.0 | 5.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 5.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.7** B | 1.0 | 5.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 5.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.1 U | 2.1 | 10.4 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.4** B | 1.0 | 5.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.44** B | 0.10 | 0.51 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.16** | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 U | 0.51 | 1.03 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 42.3 U | 42.3 | 106 | mg/kg dry | 1 | L009141 | 09/05/2010 | 09/05/2010 | SW846 9034 |
| **pH** | **8.35** | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B4 (1008192-06) Soil** | | | | | | | | | |
| **%Solids** | **92.9** | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.1 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **16.4** | 1.0 | 5.1 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.1** B | 1.0 | 5.1 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.8** B | 1.0 | 5.1 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 5.1 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.1 U | 2.1 | 10.3 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.0** B | 1.0 | 5.1 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.70** | 0.09 | 0.47 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 U | 0.05 | 0.22 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |

## Sample: J1C0B4 - J1C0C1, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/15/2010 18:00 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C0B4 (1008192-06) Soil** | | | | | | | | | | |
| Cyanide (total) | 0.51 | U | 0.51 | 1.02 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 43.1 | U | 43.1 | 108 | mg/kg dry | 1 | L009141 | 09/05/2010 | 09/05/2010 | SW846 9034 |
| **pH** | **8.21** | | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0C1 (1008192-07) Soil** | | | | | | | | | | |
| **%Solids** | **93.4** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **10.2** | | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 | U | 2.0 | 9.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **3.0** | B | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.33** | B | 0.08 | 0.41 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.19** | B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.50 | U | 0.50 | 1.01 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 42.8 | U | 42.8 | 107 | mg/kg dry | 1 | L009141 | 09/05/2010 | 09/05/2010 | SW846 9034 |
| **pH** | **8.27** | | | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |

## Sample: J1C099 – J1CB2, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Ferris Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/09/2010 07:07 |

### J1C099
**1008192-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3460 U | 3460 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| Motor Oil | 10400 U | 10400 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *82 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 10400 U | 10400 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

### J1C0B0
**1008192-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3470 U | 3470 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| Motor Oil | 10400 U | 10400 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *58 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 10400 U | 10400 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

### J1C0B1
**1008192-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 17000 U | 17000 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| **Motor Oil** | **523000** D | 50900 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *87 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/08/2010* | *8015M* |
| Kerosene | 50900 U | 50900 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |

### J1C0B2
**1008192-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3430 U | 3430 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| **Motor Oil** | **127000** | 10300 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *87 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/08/2010* | *8015M* |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |

## Sample: J1C0B3 – J1C0C1, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/09/2010 07:07 |

### J1C0B3
**1008192-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 17400 U | 17400 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| **Motor Oil** | **433000** D | 52300 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *72 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/08/2010* | *8015M* |
| Kerosene | 52300 U | 52300 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |

### J1C0B4
**1008192-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3470 U | 3470 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| **Motor Oil** | **299000** | 10400 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *92 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/08/2010* | *8015M* |
| Kerosene | 10400 U | 10400 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |

### J1C0C1
**1008192-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 17700 U | 17700 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| **Motor Oil** | **744000** D | 53100 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *76 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/08/2010* | *8015M* |
| Kerosene | 53100 U | 53100 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |

# 618-10-8 Test Pit Asbestos
# Sample: J1C075 - J1C087, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 242354 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | |
| Date: | 9/1/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L55061AA** | **L55081AA** | **L551A1AA** | **L551D1AA** | **L551J1AA** |
| **Client ID** | J1C075' | J1C076' | J1C077' | J1C078' | J1C079' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | TRA | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

3

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 242354_2 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | |
| Date: | 9/1/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L551V1AA** | **L551X1AA** | **L552F1AA** | **L552P1AA** | **L552W1AA** |
| **Client ID** | J1C080' | J1C087' | J1C081' | J1C082' | J1C083' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

4

# LABORATORY DATA RESULTS

## 618-10-13 TEST PIT

# 618-10-13 Surge Pit Radionuclide Analytical Results
# Sample: J1C060 and J1C061, Radionuclides

**Sample Results Summary**

**TestAmerica TARL**

Ordered by Method, Batch No., Client Sample ID.

**Date:** 07-Sep-10

**Report No.** : 44611

**SDG No:** J00824

| Batch | Client Id Work Order | Parameter | Result +- Uncertainty ( 2s) | Qual | Units | Tracer Yield | MDC or MDA | CRDL | RPD |
|---|---|---|---|---|---|---|---|---|---|
| 0225426 UISO_IE_PLATE_AEA | | | | | | | | | |
| J1C060 | | | | | | | | | |
| | L5J161AC | U-234 | 6.47E-01 +- 3.1E-01 | | pCi/g | 79% | 1.11E-01 | 1.00E+00 | |
| | | U-235 | 8.69E-02 +- 1.0E-01 | U | pCi/g | 79% | 1.11E-01 | 1.00E+00 | |
| | | U-238 | 6.33E-01 +- 3.1E-01 | | pCi/g | 79% | 1.77E-01 | 1.00E+00 | |
| J1C060 DUP | | | | | | | | | |
| | L5J161AL | U-234 | 5.86E-01 +- 3.0E-01 | | pCi/g | 77% | 1.86E-01 | 1.00E+00 | 9.9 |
| | | U-235 | 0.00E+00 +- 6.0E-02 | U | pCi/g | 77% | 1.13E-01 | 1.00E+00 | 200.0 |
| | | U-238 | 6.70E-01 +- 3.3E-01 | | pCi/g | 77% | 2.03E-01 | 1.00E+00 | 5.7 |
| J1C061 | | | | | | | | | |
| | L5J221AC | U-234 | 8.53E-01 +- 4.0E-01 | | pCi/g | 67% | 1.33E-01 | 1.00E+00 | |
| | | U-235 | 7.11E-02 +- 1.0E-01 | U | pCi/g | 67% | 1.33E-01 | 1.00E+00 | |
| | | U-238 | 1.23E+00 +- 5.1E-01 | | pCi/g | 67% | 1.87E-01 | 1.00E+00 | |
| 0225423 GAMMA_GS | | | | | | | | | |
| J1C060 | | | | | | | | | |
| | L5J161AG | AMERICIUM 241 | 2.15E-01 +- 1.7E-01 | U | pCi/g | | 2.96E-01 | | |
| | | CO-60 | -5.28E-03 +- 1.7E-02 | U | pCi/g | | 2.97E-02 | 5.00E-02 | |
| | | CS-137 | 2.54E-02 +- 1.7E-02 | U | pCi/g | | 3.14E-02 | 1.00E-01 | |
| | | EU-152 | 1.11E-02 +- 4.3E-02 | U | pCi/g | | 7.33E-02 | 1.00E-01 | |
| | | EU-154 | -6.34E-04 +- 5.0E-02 | U | pCi/g | | 8.85E-02 | 1.00E-01 | |
| | | EU-155 | 2.72E-02 +- 5.4E-02 | U | pCi/g | | 9.07E-02 | 1.00E-01 | |
| J1C060 DUP | | | | | | | | | |
| | L5J161AJ | AMERICIUM 241 | 7.45E-02 +- 7.8E-02 | U | pCi/g | | 1.39E-01 | | 97.1 |
| | | CO-60 | 5.82E-03 +- 1.4E-02 | U | pCi/g | | 2.63E-02 | 5.00E-02 | 4090.0 |
| | | CS-137 | 1.07E-02 +- 1.4E-02 | U | pCi/g | | 2.52E-02 | 1.00E-01 | 81.3 |
| | | EU-152 | 7.04E-03 +- 3.2E-02 | U | pCi/g | | 5.53E-02 | 1.00E-01 | 44.5 |
| | | EU-154 | 3.12E-02 +- 4.7E-02 | U | pCi/g | | 8.62E-02 | 1.00E-01 | 208.3 |
| | | EU-155 | 2.91E-02 +- 3.5E-02 | U | pCi/g | | 6.19E-02 | 1.00E-01 | 6.7 |
| J1C061 | | | | | | | | | |
| | L5J221AG | AMERICIUM 241 | 1.24E-03 +- 7.2E-02 | U | pCi/g | | 1.20E-01 | | |
| | | CO-60 | 1.58E-02 +- 1.5E-02 | U | pCi/g | | 2.96E-02 | 5.00E-02 | |
| | | CS-137 | -1.00E-02 +- 1.6E-02 | U | pCi/g | | 2.60E-02 | 1.00E-01 | |
| | | EU-152 | -1.73E-03 +- 6.0E-02 | U | pCi/g | | 7.61E-02 | 1.00E-01 | |
| | | EU-154 | -6.02E-04 +- 4.9E-02 | U | pCi/g | | 8.60E-02 | 1.00E-01 | |
| | | EU-155 | -4.06E-03 +- 5.2E-02 | U | pCi/g | | 8.83E-02 | 1.00E-01 | |
| 0225428 C14_CHEM_LSC | | | | | | | | | |
| J1C060 | | | | | | | | | |
| | L5J161AH | C-14 | 3.79E-03 +- 5.7E-03 | U | pCi/g | 100% | 1.18E-02 | 5.00E+01 | |
| J1C060 DUP | | | | | | | | | |

TestAmerica

rptSTLRchSaSummary2 V5.2.7
A2002

RPD - Relative Percent Difference.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

**Sample Results Summary**

**TestAmerica TARL**

Ordered by Method, Batch No., Client Sample ID.

**Date:** 07-Sep-10

**Report No. :** 44611

**SDG No:** J00824

| Batch | Client Id / Work Order | Parameter | Result +- Uncertainty ( 2s) | Qual | Units | Tracer Yield | MDC or MDA | CRDL | RPD |
|---|---|---|---|---|---|---|---|---|---|
| 0225428 C14_CHEM_LSC | | | | | | | | | |
| J1C060 DUP | | | | | | | | | |
| | L5J161AM | C-14 | 3.11E-04 +- 5.6E-03 | U | pCi/g | 100% | 1.18E-02 | 5.00E+01 | 169.7 |
| J1C061 | | | | | | | | | |
| | L5J221AH | C-14 | -1.01E-03 +- 5.5E-03 | U | pCi/g | 100% | 1.18E-02 | 5.00E+01 | |
| 0225429 906.0_H3_LSC | | | | | | | | | |
| J1C060 | | | | | | | | | |
| | L5J161AF | H-3 | 4.23E-03 +- 6.8E-03 | U | pCi/g | 100% | 1.45E-02 | 4.00E+02 | |
| J1C061 | | | | | | | | | |
| | L5J221AF | H-3 | -2.00E-03 +- 9.2E-03 | U | pCi/g | 100% | 2.02E-02 | 4.00E+02 | |
| J1C061 DUP | | | | | | | | | |
| | L5J221AL | H-3 | -4.82E-03 +- 8.9E-03 | U | pCi/g | 100% | 1.98E-02 | 4.00E+02 | -82.7 |

**No. of Results:** 33

# 618-10-13 Surge Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C060, GEA

Apex™

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Analysis Report for RCF25245

J1C060 SAF:RC-154 618-10-13 SURGE PIT SOIL PILE

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | RCF25245 |
| Sample Description | : J1C060 SAF:RC-154 618-10-13 SURGE PIT SOIL PILE |
| Sample Type | : 80g pillbox |
| Sample Size | : 6.200E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/11/2010 7:55:00AM |
| Acquisition Started | : 8/11/2010 2:53:07PM |
| Procedure | : 80 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : 80 Gram Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.5 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/12/2010 |
| Efficiency Calibration Description | : PGTWHITE 80g PB 031210 EffCal SN80399A-238 |
| Sample Number | : 5280 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.976 | 1.40E+01 | 2.92E+00 | |
| PB-212 | | 0.708 | 5.65E-01 | 1.43E-01 | |
| RA-226d | g | 0.343 | 5.19E-01 | 1.57E-01 | |
| TH-232d | | 0.850 | 9.38E-01 | 1.66E-01 | |

## Sample: J1C061, GEA

Apex

8/11/2010 3:54:30PM Page 1 of 4

Analysis Report for RCF25246

J1C061 SAF:RC-154 618-10-13 SURGE PIT SOIL PILE

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25246 |
| Sample Description | : J1C061 SAF:RC-154 618-10-13 SURGE PIT SOIL PILE |
| Sample Type | : 80g pillbox |
| Sample Size | : 6.200E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/11/2010 8:10:00AM |
| Acquisition Started | : 8/11/2010 2:54:17PM |
| Procedure | : 80 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : 80 Gram Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.2 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 80gPB 032610Cal 80399A-238 |
| Sample Number | : 5281 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.969 | 1.24E+01 | 2.98E+00 | |
| PB-212 | | 0.707 | 7.05E-01 | 1.68E-01 | |
| RA-226d | @ | 0.613 | 4.92E-01 | 1.47E-01 | |
| TH-232d | | 0.681 | 4.39E-01 | 1.60E-01 | |

# 618-10-13 Surge Pit Chemical Analytical Results
# Sample: J1C060

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C060
Date Collected: 08/11/10 07:55
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-1
Matrix: Solid
Percent Solids: 96.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 5.0 | U | 19 | 5.0 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Benzene | 0.44 | U T | 4.7 | 0.44 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Bromodichloromethane | 0.21 | U | 4.7 | 0.21 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Bromoform | 0.21 | U | 4.7 | 0.21 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Bromomethane | 0.47 | U | 9.3 | 0.47 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 2-Butanone (MEK) | 1.7 | U | 9.3 | 1.7 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Carbon disulfide | 0.39 | U | 4.7 | 0.39 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Carbon tetrachloride | 0.59 | U | 4.7 | 0.59 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Chlorobenzene | 0.50 | U | 4.7 | 0.50 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Dibromochloromethane | 0.53 | U | 4.7 | 0.53 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Chloroethane | 0.83 | U | 9.3 | 0.83 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Chloroform | 0.27 | U | 4.7 | 0.27 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Chloromethane | 0.72 | U | 9.3 | 0.72 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| cis-1,3-Dichloropropene | 1.2 | U | 4.7 | 1.2 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Ethylbenzene | 0.63 | U T | 4.7 | 0.63 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,1-Dichloroethane | 0.20 | U T | 4.7 | 0.20 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,2-Dichloroethane | 0.65 | U | 4.7 | 0.65 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,1-Dichloroethene | 0.55 | U T | 4.7 | 0.55 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,1,2,2-Tetrachloroethane | 0.57 | U | 4.7 | 0.57 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,2-Dichloropropane | 0.51 | U T | 4.7 | 0.51 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Tetrachloroethene | 0.55 | U | 4.7 | 0.55 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Toluene | 0.64 | U | 4.7 | 0.64 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 2-Hexanone | 4.6 | U | 19 | 4.6 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| trans-1,3-Dichloropropene | 0.63 | U | 4.7 | 0.63 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,1,1-Trichloroethane | 0.49 | U | 4.7 | 0.49 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,1,2-Trichloroethane | 0.82 | U | 4.7 | 0.82 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Methylene Chloride | 4.0 | J T B | 4.7 | 0.70 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 4.1 | U | 9.3 | 4.1 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Trichloroethene | 0.21 | U T | 4.7 | 0.21 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Vinyl chloride | 1.3 | U | 4.7 | 1.3 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Xylenes, Total | 0.57 | U | 4.7 | 0.57 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| Styrene | 0.59 | U | 4.7 | 0.59 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |
| 1,2-Dichloroethene, Total | 0.36 | U | 4.7 | 0.36 | ug/Kg | ☼ | | 08/24/10 09:53 | 1 |

| *Tentatively Identified Compound* | *Est. Result* | *Qualifier* | *Unit* | *D* | *RT* | *CAS No.* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|---|---|---|
| *Naphthalene* | *0.65* | *J N B* | *ug/Kg* | ☼ | *15.66* | *91-20-3* | | *08/24/10 09:53* | *1* |
| *Tentatively Identified Compound* | *None* | | *ug/Kg* | ☼ | | | | *08/24/10 09:53* | *1* |

| *Surrogate* | *% Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *113* | | *70 - 127* | | *08/24/10 09:53* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *75 - 121* | | *08/24/10 09:53* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *58 - 140* | | *08/24/10 09:53* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *80 - 126* | | *08/24/10 09:53* | *1* |

Method: 8270C - Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 11 | U | 340 | 11 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Acenaphthylene | 17 | U | 340 | 17 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Anthracene | 17 | U | 340 | 17 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Benzo[a]anthracene | 21 | U | 340 | 21 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Benzo[a]pyrene | 21 | U | 340 | 21 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |

TestAmerica Denver

# Sample: J1C060

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C060
Date Collected: 08/11/10 07:55
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-1
Matrix: Solid
Percent Solids: 96.3

Method: 8270C - Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[b]fluoranthene | 27 | U | 340 | 27 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Benzo[ghi]perylene | 16 | U | 340 | 16 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Benzo[k]fluoranthene | 41 | U | 340 | 41 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Bis(2-chloroethoxy)methane | 24 | U | 340 | 24 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Bis(2-chloroethyl)ether | 17 | U | 340 | 17 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| bis (2-chloroisopropyl) ether | 24 | U | 340 | 24 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Bis(2-ethylhexyl) phthalate | 47 | U | 340 | 47 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4-Bromophenyl phenyl ether | 20 | U | 340 | 20 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Butyl benzyl phthalate | 44 | U | 340 | 44 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Carbazole | 37 | U | 340 | 37 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4-Chloroaniline | 84 | U | 340 | 84 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4-Chloro-3-methylphenol | 68 | U | 340 | 68 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Chloronaphthalene | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Chlorophenol | 22 | U | 340 | 22 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4-Chlorophenyl phenyl ether | 22 | U | 340 | 22 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Chrysene | 28 | U | 340 | 28 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Dibenz(a,h)anthracene | 20 | U | 340 | 20 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Dibenzofuran | 21 | U | 340 | 21 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 1,2-Dichlorobenzene | 23 | U | 340 | 23 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 1,3-Dichlorobenzene | 12 | U | 340 | 12 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 1,4-Dichlorobenzene | 14 | U | 340 | 14 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 3,3'-Dichlorobenzidine | 93 | U | 680 | 93 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4-Dichlorophenol | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Diethyl phthalate | 27 | U | 340 | 27 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4-Dimethylphenol | 68 | U | 340 | 68 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Dimethyl phthalate | 24 | U | 340 | 24 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Di-n-butyl phthalate | 30 | U | 340 | 30 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4,6-Dinitro-2-methylphenol | 340 | U | 680 | 340 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4-Dinitrophenol | 340 | U | 850 | 340 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4-Dinitrotoluene | 68 | U | 340 | 68 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,6-Dinitrotoluene | 29 | U | 340 | 29 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Di-n-octyl phthalate | 15 | U | 340 | 15 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Fluoranthene | 37 | U | 340 | 37 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Fluorene | 19 | U | 340 | 19 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Hexachlorobenzene | 30 | U | 340 | 30 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Hexachlorobutadiene | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Hexachlorocyclopentadiene | 51 | U | 340 | 51 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Hexachloroethane | 22 | U | 340 | 22 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Indeno[1,2,3-cd]pyrene | 23 | U | 340 | 23 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Isophorone | 17 | U | 340 | 17 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Methylnaphthalene | 20 | U | 340 | 20 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Methylphenol | 13 | U | 340 | 13 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 3 & 4 Methylphenol | 34 | U | 340 | 34 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Naphthalene | 32 | U | 340 | 32 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Nitroaniline | 51 | U | 340 | 51 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 3-Nitroaniline | 75 | U | 340 | 75 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4-Nitroaniline | 75 | U | 340 | 75 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Nitrobenzene | 23 | U | 340 | 23 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Nitrophenol | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 4-Nitrophenol | 100 | U | 680 | 100 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |

TestAmerica Denver

# Sample: J1C060

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C060
Date Collected: 08/11/10 07:55
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-1
Matrix: Solid
Percent Solids: 96.3

Method: 8270C - Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosodi-n-propylamine | 32 | U | 340 | 32 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| N-Nitrosodiphenylamine | 22 | U | 340 | 22 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Pentachlorophenol | 340 | U | 680 | 340 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Phenanthrene | 17 | U | 340 | 17 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Phenol | 19 | U | 340 | 19 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Pyrene | 12 | U | 340 | 12 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 1,2,4-Trichlorobenzene | 29 | U | 340 | 29 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4,5-Trichlorophenol | 10 | U | 340 | 10 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4,6-Trichlorophenol | 10 | U | 340 | 10 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Tributyl phosphate | 59 | U | 1600 | 59 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:13 | 1 |

| Tentatively Identified Compound | Est. Result | Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Unknown | 7300 | N J | ug/Kg | ¤ | 2.54 | | 08/25/10 16:55 | 08/27/10 12:13 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 2-Fluorobiphenyl | 79 | | 50 - 120 | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2-Fluorophenol | 88 | | 53 - 120 | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Nitrobenzene-d5 | 72 | | 50 - 120 | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Phenol-d5 | 89 | | 52 - 120 | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| Terphenyl-d14 | 101 | | 55 - 120 | 08/25/10 16:55 | 08/27/10 12:13 | 1 |
| 2,4,6-Tribromophenol | 86 | | 51 - 120 | 08/25/10 16:55 | 08/27/10 12:13 | 1 |

Method: 8015B - Diesel Range Organics (DRO) (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics [C10-C28] | 690 | U | 4100 | 690 | ug/Kg | ¤ | 08/25/10 21:10 | 09/02/10 19:12 | 1 |
| Kerosene Range Organics | 4200 | U | 12000 | 4200 | ug/Kg | ¤ | 08/25/10 21:10 | 09/02/10 19:12 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 78 | | 40 - 115 | 08/25/10 21:10 | 09/02/10 19:12 | 1 |

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 2.8 | U | 10 | 2.8 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Aroclor 1221 | 8.1 | U | 17 | 8.1 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Aroclor 1232 | 2.0 | U | 10 | 2.0 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Aroclor 1242 | 4.7 | U | 10 | 4.7 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Aroclor 1248 | 4.7 | U | 10 | 4.7 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Aroclor 1254 | 2.6 | U | 10 | 2.6 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Aroclor 1260 | 2.6 | U | 10 | 2.6 | ug/Kg | ¤ | 08/25/10 20:05 | 08/27/10 13:25 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Decachlorobiphenyl | 79 | | 59 - 130 | 08/25/10 20:05 | 08/27/10 13:25 | 1 |
| Tetrachloro-m-xylene | 90 | | 53 - 128 | 08/25/10 20:05 | 08/27/10 13:25 | 1 |

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 4270 | J L | 4.5 | 1.4 | mg/Kg | ¤ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Antimony | 0.34 | U | 0.54 | 0.34 | mg/Kg | ¤ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Arsenic | 1.3 | | 0.90 | 0.60 | mg/Kg | ¤ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Barium | 57.3 | J L | 0.45 | 0.069 | mg/Kg | ¤ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Beryllium | 0.21 | B | 0.90 | 0.15 | mg/Kg | ¤ | 08/27/10 09:00 | 08/30/10 16:21 | 5 |
| Boron | 0.88 | U | 1.8 | 0.88 | mg/Kg | ¤ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |

TestAmerica Denver

# Sample: J1C060

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C060
Date Collected: 08/11/10 07:55
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-1
Matrix: Solid
Percent Solids: 96.3

Method: 6010B - Metals (ICP) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 0.037 | U | 0.18 | 0.037 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Calcium | 5910 | J L | 45.1 | 12.7 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Chromium | 3.8 | L | 0.18 | 0.052 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Cobalt | 3.6 | | 4.5 | 0.45 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:21 | 5 |
| Copper | 11.0 | L | 0.90 | 0.20 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Iron | 26600 | J L | 4.5 | 3.4 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Lead | 3.2 | M | 2.3 | 1.2 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:21 | 5 |
| Magnesium | 3550 | J L | 18.1 | 3.3 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Manganese | 387 | J L | 0.90 | 0.090 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Molybdenum | 0.49 | B M | 1.8 | 0.23 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Nickel | 7.5 | L | 3.6 | 0.11 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Potassium | 471 | | 271 | 37.0 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Selenium | 0.92 | | 0.90 | 0.78 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Silicon | 225 | L | 9.0 | 1.9 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Silver | 0.14 | U | 0.18 | 0.14 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Sodium | 319 | | 108 | 53.3 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Vanadium | 92.8 | | 9.0 | 0.42 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:21 | 5 |
| Zinc | 46.4 | J L | 0.90 | 0.36 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |
| Zirconium | 26.3 | L | 2.3 | 0.32 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:43 | 1 |

Method: 6010B - TCLP Metals (ICP) - TCLP

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.022 | U | 0.50 | 0.022 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |
| Barium | 0.27 | B | 1.0 | 0.0020 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |
| Cadmium | 0.0020 | U | 0.10 | 0.0020 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |
| Chromium | 0.0030 | U | 0.50 | 0.0030 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |
| Lead | 0.013 | U | 0.50 | 0.013 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |
| Selenium | 0.039 | B | 0.10 | 0.024 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |
| Silver | 0.0040 | U | 0.50 | 0.0040 | mg/L | | 08/27/10 09:00 | 08/27/10 22:52 | 1 |

Method: 7470A - TCLP Mercury - TCLP

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.0020 | 0.000030 | mg/L | | 08/26/10 14:30 | 08/27/10 11:25 | 1 |

Method: 7471A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.0055 | U | 0.017 | 0.0055 | mg/Kg | ☼ | 08/20/10 09:45 | 08/20/10 19:08 | 1 |

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | 2.5 | U N | 5.2 | 2.5 | mg/Kg | ☼ | 08/18/10 11:01 | 08/18/10 13:55 | 1 |
| Total Cyanide | 0.26 | B J | 0.49 | 0.10 | mg/Kg | ☼ | 08/24/10 09:36 | 08/24/10 15:39 | 1 |
| **Analyte** | **Result** | **Qualifier** | **RL** | **RL** | **Unit** | **D** | **Prepared** | **Analyzed** | **Dil Fac** |
| Percent Moisture | 3.7 | | 0.10 | 0.10 | % | | | 08/16/10 17:52 | 1 |

General Chemistry - Soluble

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 84.9 | | 4.9 | 1.9 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |
| Nitrate as N | 0.40 | B M | 2.5 | 0.31 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |
| Nitrate Nitrite as N | 0.45 | B | 0.74 | 0.35 | mg/Kg | ☼ | | 08/25/10 14:37 | 1 |
| Bromide | 0.38 | U | 2.0 | 0.38 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |

TestAmerica Denver

# Sample: J1C060

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C060
Date Collected: 08/11/10 07:55
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-1
Matrix: Solid
Percent Solids: 96.3

General Chemistry - Soluble (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrite as N | 0.33 | U | 2.5 | 0.33 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |
| Orthophosphate as P | 1.5 | B J | 4.9 | 1.2 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |
| Sulfate | 2.1 | B | 4.9 | 1.7 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |
| Fluoride | 0.81 | U | 4.9 | 0.81 | mg/Kg | ☼ | | 08/18/10 09:42 | 1 |

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH adj. to 25 deg C | 8.85 | | 0.0100 | 0.0100 | SU | | | 08/14/10 16:39 | 1 |

# Sample: J1C061

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C061
Date Collected: 08/11/10 08:10
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-2
Matrix: Solid
Percent Solids: 96.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | 5.5 | U | 20 | 5.5 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Benzene | 0.48 | U | 5.1 | 0.48 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Bromodichloromethane | 0.23 | U | 5.1 | 0.23 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Bromoform | 0.24 | U | 5.1 | 0.24 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Bromomethane | 0.51 | U | 10 | 0.51 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 2-Butanone (MEK) | 1.9 | U | 10 | 1.9 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Carbon disulfide | 0.43 | U | 5.1 | 0.43 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Carbon tetrachloride | 0.64 | U | 5.1 | 0.64 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Chlorobenzene | 0.55 | U | 5.1 | 0.55 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Dibromochloromethane | 0.58 | U | 5.1 | 0.58 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Chloroethane | 0.91 | U | 10 | 0.91 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Chloroform | 0.30 | U | 5.1 | 0.30 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Chloromethane | 0.79 | U | 10 | 0.79 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| cis-1,3-Dichloropropene | 1.3 | U | 5.1 | 1.3 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Ethylbenzene | 0.69 | U | 5.1 | 0.69 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,1-Dichloroethane | 0.21 | U | 5.1 | 0.21 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,2-Dichloroethane | 0.72 | U | 5.1 | 0.72 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,1-Dichloroethene | 0.60 | U | 5.1 | 0.60 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,1,2,2-Tetrachloroethane | 0.62 | U | 5.1 | 0.62 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,2-Dichloropropane | 0.56 | U | 5.1 | 0.56 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Tetrachloroethene | 0.60 | U | 5.1 | 0.60 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Toluene | 0.71 | U | 5.1 | 0.71 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 2-Hexanone | 5.0 | U | 20 | 5.0 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| trans-1,3-Dichloropropene | 0.69 | U | 5.1 | 0.69 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,1,1-Trichloroethane | 0.53 | U | 5.1 | 0.53 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,1,2-Trichloroethane | 0.90 | U | 5.1 | 0.90 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Methylene Chloride | 6.9 | B | 5.1 | 0.77 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 4-Methyl-2-pentanone (MIBK) | 4.5 | U | 10 | 4.5 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Trichloroethene | 0.24 | U | 5.1 | 0.24 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Vinyl chloride | 1.4 | U | 5.1 | 1.4 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Xylenes, Total | 0.62 | U | 5.1 | 0.62 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| Styrene | 0.64 | U | 5.1 | 0.64 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |
| 1,2-Dichloroethene, Total | 0.40 | U | 5.1 | 0.40 | ug/Kg | ¤ | | 08/24/10 11:00 | 1 |

| *Tentatively Identified Compound* | *Est. Result* | *Qualifier* | *Unit* | *D* | *RT* | *CAS No.* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|---|---|---|
| *1,2,4-Trichlorobenzene* | *1.1* | *J N* | *ug/Kg* | ¤ | *15.39* | *120-82-1* | | *08/24/10 11:00* | *1* |
| *Hexachlorobutadiene* | *0.87* | *J N* | *ug/Kg* | ¤ | *15.58* | *87-68-3* | | *08/24/10 11:00* | *1* |
| *Naphthalene* | *1.2* | *J N B* | *ug/Kg* | ¤ | *15.68* | *91-20-3* | | *08/24/10 11:00* | *1* |

TestAmerica Denver

# Sample: J1C061

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C061
Date Collected: 08/11/10 08:10
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-2
Matrix: Solid
Percent Solids: 96.0

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Tentatively Identified Compound | Est. Result | Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | 1.5 | J N | ug/Kg | ¤ | 15.98 | 87-61-6 | | 08/24/10 11:00 | 1 |
| Tentatively Identified Compound | None | | ug/Kg | ¤ | | | | 08/24/10 11:00 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 110 | | 76 - 127 | | 08/24/10 11:00 | 1 |
| Dibromofluoromethane (Surr) | 94 | | 75 - 121 | | 08/24/10 11:00 | 1 |
| 1,2-Dichloroethane-d4 (Surr) | 89 | | 58 - 140 | | 08/24/10 11:00 | 1 |
| Toluene-d8 (Surr) | 103 | | 80 - 120 | | 08/24/10 11:00 | 1 |

Method: 8270C - Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 11 | U | 340 | 11 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Acenaphthylene | 18 | U | 340 | 18 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Anthracene | 18 | U | 340 | 18 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Benzo[a]anthracene | 21 | U | 340 | 21 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Benzo[a]pyrene | 21 | U | 340 | 21 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Benzo[b]fluoranthene | 27 | U | 340 | 27 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Benzo[ghi]perylene | 17 | U | 340 | 17 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Benzo[k]fluoranthene | 42 | U | 340 | 42 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Bis(2-chloroethoxy)methane | 24 | U | 340 | 24 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Bis(2-chloroethyl)ether | 17 | U | 340 | 17 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| bis (2-chloroisopropyl) ether | 24 | U | 340 | 24 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Bis(2-ethylhexyl) phthalate | 48 | U | 340 | 48 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4-Bromophenyl phenyl ether | 20 | U | 340 | 20 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Butyl benzyl phthalate | 45 | U | 340 | 45 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Carbazole | 37 | U | 340 | 37 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4-Chloroaniline | 85 | U | 340 | 85 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4-Chloro-3-methylphenol | 69 | U | 340 | 69 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Chloronaphthalene | 10 | U | 340 | 10 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Chlorophenol | 22 | U | 340 | 22 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4-Chlorophenyl phenyl ether | 22 | U | 340 | 22 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Chrysene | 28 | U | 340 | 28 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Dibenz(a,h)anthracene | 20 | U | 340 | 20 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Dibenzofuran | 21 | U | 340 | 21 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 1,2-Dichlorobenzene | 23 | U | 340 | 23 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 1,3-Dichlorobenzene | 12 | U | 340 | 12 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 1,4-Dichlorobenzene | 14 | U | 340 | 14 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 3,3'-Dichlorobenzidine | 93 | U | 690 | 93 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4-Dichlorophenol | 10 | U | 340 | 10 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Diethyl phthalate | 27 | U | 340 | 27 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4-Dimethylphenol | 69 | U | 340 | 69 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Dimethyl phthalate | 24 | U | 340 | 24 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Di-n-butyl phthalate | 30 | U | 340 | 30 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4,6-Dinitro-2-methylphenol | 340 | U | 690 | 340 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4-Dinitrophenol | 350 | U | 860 | 350 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4-Dinitrotoluene | 69 | U | 340 | 69 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,6-Dinitrotoluene | 29 | U | 340 | 29 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Di-n-octyl phthalate | 15 | U | 340 | 15 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Fluoranthene | 37 | U | 340 | 37 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Fluorene | 19 | U | 340 | 19 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Hexachlorobenzene | 30 | U | 340 | 30 | ug/Kg | ¤ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |

TestAmerica Denver

# Sample: J1C061

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C061
Date Collected: 08/11/10 08:10
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-2
Matrix: Solid
Percent Solids: 96.0

Method: 8270C - Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Hexachlorocyclopentadiene | 52 | U | 340 | 52 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Hexachloroethane | 22 | U | 340 | 22 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Indeno[1,2,3-cd]pyrene | 23 | U | 340 | 23 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Isophorone | 18 | U | 340 | 18 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Methylnaphthalene | 20 | U | 340 | 20 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Methylphenol | 13 | U | 340 | 13 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 3 & 4 Methylphenol | 34 | U | 340 | 34 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Naphthalene | 32 | U | 340 | 32 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Nitroaniline | 52 | U | 340 | 52 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 3-Nitroaniline | 76 | U | 340 | 76 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4-Nitroaniline | 75 | U | 340 | 75 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Nitrobenzene | 23 | U | 340 | 23 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Nitrophenol | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 4-Nitrophenol | 100 | U | 690 | 100 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| N-Nitrosodi-n-propylamine | 32 | U | 340 | 32 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| N-Nitrosodiphenylamine | 22 | U | 340 | 22 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Pentachlorophenol | 340 | U | 690 | 340 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Phenanthrene | 18 | U | 340 | 18 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Phenol | 19 | U | 340 | 19 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Pyrene | 13 | U | 340 | 13 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 1,2,4-Trichlorobenzene | 29 | U | 340 | 29 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4,5-Trichlorophenol | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4,6-Trichlorophenol | 10 | U | 340 | 10 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Tributyl phosphate | 60 | U | 1700 | 60 | ug/Kg | ☼ | 08/25/10 16:55 | 08/27/10 12:32 | 1 |

| Tentatively Identified Compound | Est. Result | Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Unknown | 7700 | N J | ug/Kg | ☼ | 2.55 | | 08/25/10 16:55 | 08/27/10 12:32 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 2-Fluorobiphenyl | 79 | | 50 - 120 | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2-Fluorophenol | 67 | | 53 - 120 | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Nitrobenzene-d5 | 70 | | 50 - 120 | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Phenol-d5 | 90 | | 52 - 120 | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| Terphenyl-d14 | 102 | | 55 - 120 | 08/25/10 16:55 | 08/27/10 12:32 | 1 |
| 2,4,6-Tribromophenol | 84 | | 51 - 120 | 08/25/10 16:55 | 08/27/10 12:32 | 1 |

Method: 8015B - Diesel Range Organics (DRO) (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics [C10-C28] | 690 | U | 4100 | 690 | ug/Kg | ☼ | 08/25/10 21:10 | 09/02/10 19:45 | 1 |
| Kerosene Range Organics | 4200 | U | 12000 | 4200 | ug/Kg | ☼ | 08/25/10 21:10 | 09/02/10 19:45 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| o-Terphenyl | 73 | | 40 - 115 | 08/25/10 21:10 | 09/02/10 19:45 | 1 |

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 2.8 | U | 10 | 2.8 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |
| Aroclor 1221 | 8.1 | U | 17 | 8.1 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |
| Aroclor 1232 | 2.0 | U | 10 | 2.0 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |
| Aroclor 1242 | 4.7 | U | 10 | 4.7 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |
| Aroclor 1248 | 4.7 | U | 10 | 4.7 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |

TestAmerica Denver

# Sample: J1C061

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C061
Date Collected: 08/11/10 08:10
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-2
Matrix: Solid
Percent Solids: 96.0

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1254 | 2.6 | U | 10 | 2.6 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |
| Aroclor 1260 | 2.6 | U | 10 | 2.6 | ug/Kg | ☼ | 08/25/10 20:05 | 08/27/10 13:47 | 1 |

| Surrogate | % Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| Decachlorobiphenyl | 85 | | 50 - 130 | 08/25/10 20:05 | 08/27/10 13:47 | 1 |
| Tetrachloro-m-xylene | 106 | | 53 - 128 | 08/25/10 20:05 | 08/27/10 13:47 | 1 |

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 4660 | J L | 4.7 | 1.5 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Antimony | 0.36 | U | 0.57 | 0.36 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Arsenic | 1.6 | | 0.95 | 0.62 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Barium | 59.3 | J L | 0.47 | 0.072 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Beryllium | 0.035 | B | 0.19 | 0.031 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:30 | 1 |
| Boron | 0.93 | U | 1.9 | 0.93 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Cadmium | 0.039 | U | 0.19 | 0.039 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Calcium | 6090 | J L | 47.3 | 13.3 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Chromium | 4.5 | L | 0.19 | 0.055 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Cobalt | 1.8 | | 0.95 | 0.095 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:30 | 1 |
| Copper | 11.3 | L | 0.95 | 0.21 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Iron | 25000 | J L | 4.7 | 3.6 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Lead | 0.42 | B | 0.47 | 0.26 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:30 | 1 |
| Magnesium | 3950 | J L | 18.9 | 3.5 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Manganese | 389 | J L | 0.95 | 0.095 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Molybdenum | 0.42 | B | 1.9 | 0.25 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Nickel | 8.6 | L | 3.8 | 0.12 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Potassium | 569 | | 284 | 38.8 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Selenium | 1.0 | | 0.95 | 0.81 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Silicon | 316 | L | 9.5 | 2.0 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Silver | 0.15 | U | 0.19 | 0.15 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Sodium | 292 | | 114 | 55.9 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Vanadium | 16.2 | | 1.9 | 0.089 | mg/Kg | ☼ | 08/27/10 09:00 | 08/30/10 16:30 | 1 |
| Zinc | 43.8 | J L | 0.95 | 0.38 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |
| Zirconium | 24.8 | L | 2.4 | 0.34 | mg/Kg | ☼ | 08/27/10 09:00 | 08/27/10 17:53 | 1 |

Method: 6010B - TCLP Metals (ICP) - TCLP

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.022 | U | 0.50 | 0.022 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |
| Barium | 0.31 | B | 1.0 | 0.0020 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |
| Cadmium | 0.0020 | U | 0.10 | 0.0020 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |
| Chromium | 0.0030 | U | 0.50 | 0.0030 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |
| Lead | 0.013 | U | 0.50 | 0.013 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |
| Selenium | 0.036 | B | 0.10 | 0.024 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |
| Silver | 0.0064 | B J C | 0.50 | 0.0040 | mg/L | | 08/27/10 09:00 | 08/27/10 23:01 | 1 |

Method: 7470A - TCLP Mercury - TCLP

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.000030 | U | 0.0020 | 0.000030 | mg/L | | 08/26/10 14:30 | 08/27/10 11:34 | 1 |

Method: 7471A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.0052 | U N | 0.016 | 0.0052 | mg/Kg | ☼ | 08/20/10 09:45 | 08/20/10 19:10 | 1 |

TestAmerica Denver

# Sample: J1C061

## Analytical Data

Client: Washington Closure Hanford
Project/Site: SAF# RC-154

TestAmerica Job ID: 280-6372-1
SDG: J00824

Client Sample ID: J1C061
Date Collected: 08/11/10 08:10
Date Received: 08/14/10 08:30

Lab Sample ID: 280-6372-2
Matrix: Solid
Percent Solids: 96.0

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | 2.5 | U | 5.2 | 2.5 | mg/Kg | ☼ | 08/18/10 11:01 | 08/18/10 13:55 | 1 |
| Total Cyanide | 0.29 | B J | 0.50 | 0.10 | mg/Kg | ☼ | 08/24/10 09:36 | 08/24/10 15:44 | 1 |

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 4.0 | | 0.10 | 0.10 | % | | | 08/16/10 17:52 | 1 |

General Chemistry - Soluble

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 182 | | 5.1 | 2.0 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |
| Nitrate as N | 0.51 | B | 2.6 | 0.32 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |
| Nitrate Nitrite as N | 0.66 | B | 0.77 | 0.37 | mg/Kg | ☼ | | 08/25/10 14:42 | 1 |
| Bromide | 0.40 | U | 2.0 | 0.40 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |
| Nitrite as N | 0.34 | U | 2.6 | 0.34 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |
| Orthophosphate as P | 2.2 | B J | 5.1 | 1.3 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |
| Sulfate | 2.2 | B | 5.1 | 1.8 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |
| Fluoride | 0.84 | U | 5.1 | 0.84 | mg/Kg | ☼ | | 08/18/10 10:32 | 1 |

| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| pH adj. to 25 deg C | 8.50 | | 0.0100 | 0.0100 | SU | | | 08/14/10 16:43 | 1 |

# 618-10-13 Surge Pit Asbestos
# Sample: J1C066 and J1C068, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | **228174** |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01069 |
| Date: | 8/18/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L5H6A1AA** | **L5H7W1AA** | | | |
| **Client ID** | J1C066' | J1C068' | | | |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | | | | |
| Homogeneous | Y | Y | | | |
| Color | brown/black | brown/black | | | |
| % Visible Fibers | 0 | 0 | | | |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | | | |
| %Amosite | ND | ND | | | |
| %Crocidolite | ND | ND | | | |
| %Tremolite | ND | ND | | | |
| %Actinolite | ND | ND | | | |
| % Anthophylite | ND | ND | | | |
| **% Total Asbestos** | **ND** | **ND** | | | |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | | | |
| % Glass Fibers | ND | ND | | | |
| % Other fibers | ND | ND | | | |
| % Non-fibrous | 100 | 100 | | | |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

3

# 618-10-13 Test Pit Radionuclide Analytical Results
# Sample: J1C0B5, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2235**

7881-008 J1C0B5

**D A T A  S H E E T**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-08 | Client sample id | J1C0B5 |
| Dept sample id | 7881-008 | Location/Matrix | 618-10-13 Trench Soil (G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 08:40 1315 g |
| % solids | 94.1 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.135 | 1.6 | 2.81 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.963 | 0.46 | 0.747 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.106 | 0.13 | 0.395 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 1.19 | 0.44 | 0.337 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.222 | 0.15 | 0.283 | 1.00 | U | U |
| Uranium 238 | U-238 | 1.04 | 0.38 | 0.234 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.034 | 0.14 | 0.374 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.034 | 0.14 | 0.259 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 12.3 | 0.55 | 0.250 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.025 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.020 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.431 | 0.046 | 0.043 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.661 | 0.10 | 0.100 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.054 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.079 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.059 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.534 | 0.027 | 0.023 | | | GAM |
| Thorium 232 | TH-232 | 0.661 | 0.10 | 0.100 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.122 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.82 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.035 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

## Sample: J1C0B6, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2235**

7881-009 J1C0B6

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-09 | Client sample id | J1C0B6 |
| Dept sample id | 7881-009 | Location/Matrix | 618-10-13 Trench Soil (G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 08:50 1337 g |
| % solids | 94.6 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.236 | 1.7 | 2.94 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.494 | 0.39 | 0.633 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | -0.028 | 0.13 | 0.372 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.604 | 0.32 | 0.243 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.115 | 0.15 | 0.294 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.667 | 0.32 | 0.243 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.032 | 0.13 | 0.310 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.032 | 0.065 | 0.247 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.5 | 0.69 | 0.254 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.025 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.023 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.338 | 0.047 | 0.046 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.564 | 0.12 | 0.112 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.058 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.076 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.065 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.566 | 0.033 | 0.030 | | | GAM |
| Thorium 232 | TH-232 | 0.564 | 0.12 | 0.112 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.130 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.63 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.036 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

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## Sample: J1C0B7, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**

**SAMPLE DELIVERY GROUP K2235**

7881-010 J1C0B7

**D A T A  S H E E T**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Vervillo | Contract | No. S00W235A00 |
| Lab sample id | S008225-10 | Client sample id | J1C0B7 |
| Dept sample id | 7881-010 | Location/Matrix | 618-10-13 Trench Soil (G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 09:00 1299 g |
| % solids | 94.5 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.731 | 1.6 | 2.85 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.681 | 0.38 | 0.620 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.062 | 0.17 | 0.433 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.857 | 0.33 | 0.205 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.065 | 0.065 | 0.248 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.429 | 0.22 | 0.205 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.14 | 0.385 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.070 | 0.266 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 10.4 | 0.73 | 0.263 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.022 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.024 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.349 | 0.048 | 0.045 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.613 | 0.13 | 0.123 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.064 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.080 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.068 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.499 | 0.035 | 0.032 | | | GAM |
| Thorium 232 | TH-232 | 0.613 | 0.13 | 0.123 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.139 | | U | GAM |
| Uranium 238 | U-238 | U | | 3.14 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.038 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

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## Sample: J1C0B8, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-011 J1C0B8

DATA SHEET

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford | SDG K2235 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S008225-11 | Client sample id | J1C0B8 | | |
| Dept sample id | 7881-011 | Location/Matrix | 618-10-13 Trench Soil (G | SOLID | |
| Received | 08/26/10 | Collected/Weight | 08/23/10 09:10 | 1417 g | |
| % solids | 92.5 | Custody/SAF No | RC-154-026 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.256 | 1.5 | 2.66 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.408 | 0.37 | 0.606 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | -0.019 | 0.14 | 0.405 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 1.12 | 0.39 | 0.205 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.065 | 0.065 | 0.248 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.831 | 0.33 | 0.205 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.13 | 0.362 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.033 | 0.066 | 0.251 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.9 | 0.45 | 0.128 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.018 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.018 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.354 | 0.043 | 0.040 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.476 | 0.080 | 0.082 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.048 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.070 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.053 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.460 | 0.023 | 0.021 | | | GAM |
| Thorium 232 | TH-232 | 0.476 | 0.080 | 0.082 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.110 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.34 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.082 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 1.06 |
| Report date | 09/14/10 |

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## Sample: J1C0B9, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-012 J1C0B9

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-12 | Client sample id | J1C0B9 |
| Dept sample id | 7881-012 | Location/Matrix | 618-10-13 Trench Soil 1G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 09:20 1354 g |
| % solids | 93.7 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.414 | 1.5 | 2.58 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.726 | 0.35 | 0.569 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.102 | 0.13 | 0.408 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 1.05 | 0.34 | 0.211 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.067 | 0.067 | 0.256 | 1.00 | U | U |
| Uranium 238 | U-238 | 1.05 | 0.34 | 0.211 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.139 | 0.28 | 0.513 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.093 | 0.355 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.2 | 0.73 | 0.382 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.034 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.033 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.404 | 0.060 | 0.057 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.512 | 0.13 | 0.131 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.078 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.108 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.092 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.541 | 0.038 | 0.037 | | | GAM |
| Thorium 232 | TH-232 | 0.512 | 0.13 | 0.131 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.189 | | U | GAM |
| Uranium 238 | U-238 | U | | 4.00 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.282 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanfordl |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

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## Sample: J1C0C0, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2235

7881-013 J1C0C0

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-13 | Client sample id | J1C0C0 |
| Dept sample id | 7881-013 | Location/Matrix | 618-10-13 Trench Soil (G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 09:30 1362 g |
| % solids | 93.7 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.15 | 1.5 | 2.75 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.630 | 0.37 | 0.602 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.108 | 0.13 | 0.391 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.651 | 0.28 | 0.208 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0 | 0.066 | 0.251 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.461 | 0.22 | 0.208 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.18 | 0.494 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.089 | 0.342 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.6 | 0.43 | 0.176 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.017 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.018 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.372 | 0.037 | 0.033 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.564 | 0.076 | 0.074 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.049 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.062 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.071 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.578 | 0.030 | 0.027 | | | GAM |
| Thorium 232 | TH-232 | 0.564 | 0.076 | 0.074 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.133 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.17 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.128 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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## Sample: J1C0C2, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2235**

7881-014 J1C0C2

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-14 | Client sample id | J1C0C2 |
| Dept sample id | 7881-014 | Location/Matrix | 618-10-13 Trench Soil (G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 09:40 1344 g |
| % solids | 94.2 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.184 | 1.7 | 2.88 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.19 | 0.41 | 0.656 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.118 | 0.14 | 0.382 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.702 | 0.29 | 0.215 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.102 | 0.14 | 0.260 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.309 | 0.17 | 0.215 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.132 | 0.13 | 0.252 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.033 | 0.13 | 0.252 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 10.8 | 0.48 | 0.207 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.022 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.132 | 0.022 | 0.023 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.352 | 0.040 | 0.038 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.523 | 0.085 | 0.080 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.049 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.074 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.055 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.474 | 0.026 | 0.022 | | | GAM |
| Thorium 232 | TH-232 | 0.523 | 0.085 | 0.080 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.116 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.57 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.033 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 1.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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Page 26

## Sample: J1C1D3, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2235**

7881-015 J1C1D3

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7881 | Client/Case no | Hanford SDG K2235 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S008225-15 | Client sample id | J1C1D3 |
| Dept sample id | 7881-015 | Location/Matrix | 618-10-13 Trench Soil (G SOLID |
| Received | 08/26/10 | Collected/Weight | 08/23/10 09:50 1393 g |
| % solids | 94.2 | Custody/SAF No | RC-154-026 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.204 | 1.5 | 2.55 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.352 | 0.36 | 0.583 | 1.00 | U | C |
| Technetium 99 | 14133-76-7 | -0.101 | 0.13 | 0.404 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.396 | 0.23 | 0.216 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.034 | 0.069 | 0.262 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.736 | 0.29 | 0.216 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.057 | 0.220 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.057 | 0.219 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.3 | 0.46 | 0.181 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.018 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.037 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.356 | 0.043 | 0.041 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.621 | 0.083 | 0.074 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.055 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.059 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.070 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.536 | 0.031 | 0.028 | | | GAM |
| Thorium 232 | TH-232 | 0.621 | 0.083 | 0.074 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.145 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.22 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.095 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/14/10 |

**DATA SHEETS**
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**SUMMARY DATA SECTION**
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# 618-10-13 Test Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C0B5, GEA

Apex

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Analysis Report for RCF25357

J1C0B5 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 1 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25357 |
| Sample Description | : J1C0B5 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 1 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.780E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 8:40:00AM |
| Acquisition Started | : 8/24/2010 11:48:36AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3601.1 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5734 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.996 | 5.36E+00 | 6.96E-01 | |
| RA-226d | @ | 0.620 | 1.48E-01 | 3.00E-02 | |
| TH-232d | | 0.343 | 2.16E-01 | 4.25E-02 | |

## Sample: J1C0B6, GEA

Apex™

8/24/2010 12:48:54PM Page 1 of 4

Analysis Report for RCF25358

J1C0B6 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 2 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25358 |
| Sample Description | : J1C0B6 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 2 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.600E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 8:50:00AM |
| Acquisition Started | : 8/24/2010 11:48:42AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5735 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.984 | 5.02E+00 | 6.66E-01 | |
| PB-212 | | 0.710 | 1.82E-01 | 2.97E-02 | |
| RA-226d | @ | 0.620 | 1.66E-01 | 2.91E-02 | |
| TH-232d | | 0.994 | 1.52E-01 | 2.55E-02 | |
| U-238d | | 0.333 | 2.66E-01 | 1.93E-01 | |

## Sample: J1C0B7, GEA

Apex™

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Analysis Report for RCF25359

J1C0B7 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 3 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25359 |
| Sample Description | : J1C0B7 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 3 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.670E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 9:00:00AM |
| Acquisition Started | : 8/24/2010 1:23:50PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3601.0 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5754 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.990 | 4.89E+00 | 6.50E-01 | |
| PB-212 | | 0.710 | 1.63E-01 | 2.94E-02 | |
| RA-226d | @ | 0.619 | 1.70E-01 | 2.97E-02 | |
| TH-232d | | 0.599 | 1.24E-01 | 3.20E-02 | |

## Sample: J1C0B8, GEA

Apex™

8/24/2010 2:24:08PM Page 1 of 4

Analysis Report for RCF25360

J1C0B8 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 4 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25360 |
| Sample Description | : J1C0B8 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 4 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.530E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 9:10:00AM |
| Acquisition Started | : 8/24/2010 1:23:56PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5755 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.982 | 5.52E+00 | 7.02E-01 | |
| PB-212 | | 0.710 | 1.67E-01 | 2.91E-02 | |
| RA-226d | @ | 0.620 | 1.52E-01 | 2.59E-02 | |
| TH-232d | | 0.850 | 1.60E-01 | 2.59E-02 | |
| U-238d | | 0.334 | 1.79E-01 | 1.56E-01 | |

## Sample: J1C0B9, GEA

Apex™

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Analysis Report for RCF25361

J1C0B9 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 5 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25361 |
| Sample Description | : J1C0B9 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 5 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.660E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 9:20:00AM |
| Acquisition Started | : 8/24/2010 2:36:18PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5772 |

QUALITATIVE ONLY

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.983 | 5.49E+00 | 7.14E-01 | |
| PB-212 | | 0.711 | 1.51E-01 | 2.92E-02 | |
| RA-226d | @ | 0.621 | 1.44E-01 | 2.90E-02 | |
| TH-232d | | 0.981 | 2.23E-01 | 3.39E-02 | |

## Sample: J1C0C0, GEA

Apex™

8/24/2010 3:36:36PM Page 1 of 4

Analysis Report for RCF25362

J1C0C0 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 6 250g aG JAR

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25362 |
| Sample Description | : J1C0C0 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 6 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.540E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 9:30:00AM |
| Acquisition Started | : 8/24/2010 2:36:23PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5773 |

QUALITATIVE ONLY

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.994 | 5.17E+00 | 6.66E-01 | |
| PB-212 | | 0.710 | 1.81E-01 | 2.92E-02 | |
| RA-226d | @ | 0.619 | 1.66E-01 | 2.85E-02 | |
| TH-232d | | 0.680 | 1.36E-01 | 2.63E-02 | |

## Sample: J1C0C2, GEA

Apex™

8/24/2010 4:43:42PM Page 1 of 4

Analysis Report for RCF25363

J1C0C2 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 7 250g aG JAR

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25363 |
| Sample Description | : J1C0C2 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 7 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.460E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 9:40:00AM |
| Acquisition Started | : 8/24/2010 3:43:28PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.03 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 5775 |

QUALITATIVE ONLY

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.995 | 6.27E+00 | 7.80E-01 | |
| PB-212 | | 0.712 | 1.60E-01 | 3.03E-02 | |
| RA-226d | @ | 0.674 | 2.07E-01 | 3.46E-02 | |
| TH-232d | | 0.826 | 1.44E-01 | 3.21E-02 | |
| U-235 | | 0.545 | 2.72E-02 | 2.63E-02 | |

MDA <4.16E-02

## Sample: J1C1D3, GEA

Apex™

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Analysis Report for RCF25364

J1C1D3 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 8 250g aG JAR

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25364 |
| Sample Description | : J1C1D3 SAF:RC-154 618-10-13 TRENCH SOIL GRID # 8 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.740E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/23/2010 9:50:00AM |
| Acquisition Started | : 8/24/2010 3:43:33PM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 5776 |

QUALITATIVE ONLY

# INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.982 | 5.09E+00 | 6.40E-01 | |
| | PB-212 | | 0.709 | 1.64E-01 | 2.76E-02 | |
| | RA-226d | @ | 0.770 | 1.53E-01 | 2.59E-02 | |
| | TH-232d | | 0.680 | 1.38E-01 | 3.00E-02 | |
| X | U-235 | | 0.549 | | | |

# 618-10-13 Test Pit Chemical Analytical Results

## Laboratory Qualifiers

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 20:48 |

### Notes and Definitions

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| D | Results reported from a dilution; related reporting limits are elevated due to the presence of an interference or a high target value. |
| B | Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). |
| * | Value outside QC acceptance criteria |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| Dry | Sample results reported on a dry weight basis |
| Wet | Sample results reported on a wet weight basis |
| RPD | Relative Percent Difference |
| LOD | Limit of Detection (LOD): the minimum estimated concentration of a target analyte that can be detected reliably. Concentrations at the LOD or between the LOD and LOQ are flagged estimated with either a 'J' qualifier or client-specific qualifier. |
| LOQ | Limit of Quantitation (LOQ): the minimum concentration of a target analyte that can be quantified reliably |

# Sample: J1C0B5, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C0B5**
**1008191-01 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 6.37 U | 6.37 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **47.5** | 12.7 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 6.37 U | 6.37 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 6.37 U | 6.37 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 10.6 U | 10.6 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 5.31 U | 5.31 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | *63-151* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *90 %* | *68-140* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *115 %* | *66-122* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B6, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C0B6**
**1008191-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 5.53 | U | 5.53 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 11.1 | U | 11.1 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 11.1 | U | 11.1 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.1 | U | 11.1 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **69.8** | | 11.1 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 5.53 | U | 5.53 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 9.22 | U | 9.22 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 9.22 | U | 9.22 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 9.22 | U | 9.22 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 5.53 | U | 5.53 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 9.22 | U | 9.22 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 4.61 | U | 4.61 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *63-151* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *87 %* | | *68-140* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *116 %* | | *66-122* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B7, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C0B7**
**1008191-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethane | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,1-Dichloroethene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethane | 5.89 | U | 5.89 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 1,2-Dichloropropane | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Butanone | 11.8 | U | 11.8 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 2-Hexanone | 11.8 | U | 11.8 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.8 | U | 11.8 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| **Acetone** | **62.3** | | 11.8 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Benzene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromodichloromethane | 5.89 | U | 5.89 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromoform | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Bromomethane | 9.82 | U | 9.82 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Disulfide | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Carbon Tetrachloride | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chlorobenzene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroethane | 9.82 | U | 9.82 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloroform | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Chloromethane | 9.82 | U | 9.82 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Dibromochloromethane | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Ethylbenzene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Methylene Chloride | 5.89 | U | 5.89 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Styrene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Tetrachloroethene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Toluene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Trichloroethene | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Vinyl chloride | 9.82 | U | 9.82 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| Xylenes, total | 4.91 | U | 4.91 | ug/kg dry | 1 | L009163 | 09/02/2010 | 09/02/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | | *63-151* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *88 %* | | *68-140* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *116 %* | | *66-122* | | | *L009163* | *09/02/2010* | *09/02/2010* | *8260B* |

## Sample: J1C0B8, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C0B8**
**1008191-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethane | 6.36 U | 6.36 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloropropane | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Butanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Hexanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.7 U | 12.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| **Acetone** | **42.2** | 12.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Benzene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromodichloromethane | 6.36 U | 6.36 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromoform | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromomethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Disulfide | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Tetrachloride | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chlorobenzene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroform | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloromethane | 10.6 U | 10.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Dibromochloromethane | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Ethylbenzene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Methylene Chloride | 6.36 U | 6.36 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Styrene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Tetrachloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Toluene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Trichloroethene | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Vinyl chloride | 10.6 U | 10.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Xylenes, total | 5.30 U | 5.30 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *105 %* | *63-151* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *87 %* | *68-140* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *112 %* | *66-122* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |

## Sample: J1C0B9, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/15/2010 12:28 |

**J1C0B9**
**1008191-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethane | 6.12 U | 6.12 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloropropane | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Butanone | 12.2 U | 12.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Hexanone | 12.2 U | 12.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.2 U | 12.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| **Acetone** | **40.7** | 12.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Benzene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromodichloromethane | 6.12 U | 6.12 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromoform | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromomethane | 10.2 U | 10.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Disulfide | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Tetrachloride | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chlorobenzene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroethane | 10.2 U | 10.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroform | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloromethane | 10.2 U | 10.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Dibromochloromethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Ethylbenzene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Methylene Chloride | 6.12 U | 6.12 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Styrene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Tetrachloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Toluene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Trichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Vinyl chloride | 10.2 U | 10.2 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Xylenes, total | 5.10 U | 5.10 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *103 %* | *63-151* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *88 %* | *68-140* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *114 %* | *66-122* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |

## Sample: J1C0C0, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C0C0**
**1008191-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethane | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethane | 5.87 U | 5.87 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloropropane | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Butanone | 11.7 U | 11.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Hexanone | 11.7 U | 11.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.7 U | 11.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| **Acetone** | **28.9** | 11.7 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Benzene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromodichloromethane | 5.87 U | 5.87 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromoform | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromomethane | 9.78 U | 9.78 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Disulfide | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Tetrachloride | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chlorobenzene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroethane | 9.78 U | 9.78 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroform | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloromethane | 9.78 U | 9.78 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Dibromochloromethane | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Ethylbenzene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Methylene Chloride | 5.87 U | 5.87 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Styrene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Tetrachloroethene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Toluene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Trichloroethene | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Vinyl chloride | 9.78 U | 9.78 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Xylenes, total | 4.89 U | 4.89 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *106 %* | *63-151* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *86 %* | *65-140* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *110 %* | *65-122* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |

## Sample: J1C0C2, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C0C2**
**1008191-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethane | 6.32 U | 6.32 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloropropane | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Butanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Hexanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| **Acetone** | **23.5** | 12.6 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Benzene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromodichloromethane | 6.32 U | 6.32 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromoform | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromomethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Disulfide | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Tetrachloride | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chlorobenzene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroform | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloromethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Dibromochloromethane | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Ethylbenzene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Methylene Chloride | 6.32 U | 6.32 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Styrene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Tetrachloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Toluene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Trichloroethene | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Vinyl chloride | 10.5 U | 10.5 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Xylenes, total | 5.27 U | 5.27 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *97 %* | *63-151* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *89 %* | *68-140* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *115 %* | *66-122* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |

## Sample: J1C1D3, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 12:28 |

**J1C1D3**
**1008191-08 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethane | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,1-Dichloroethene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethane | 5.43 U | 5.43 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 1,2-Dichloropropane | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Butanone | 10.9 U | 10.9 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 2-Hexanone | 10.9 U | 10.9 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.9 U | 10.9 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| **Acetone** | **26.7** | 10.9 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Benzene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromodichloromethane | 5.43 U | 5.43 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromoform | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Bromomethane | 9.05 U | 9.05 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Disulfide | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Carbon Tetrachloride | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chlorobenzene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroethane | 9.05 U | 9.05 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloroform | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Chloromethane | 9.05 U | 9.05 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Dibromochloromethane | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Ethylbenzene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| **Methylene Chloride** | **6.33** | 5.43 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Styrene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Tetrachloroethene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Toluene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Trichloroethene | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Vinyl chloride | 9.05 U | 9.05 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| Xylenes, total | 4.52 U | 4.52 | ug/kg dry | 1 | L009164 | 09/03/2010 | 09/03/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *106 %* | *63-151* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *89 %* | *68-140* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *108 %* | *66-132* | | | *L009164* | *09/03/2010* | *09/03/2010* | *8260B* |

## Sample: J1C0B5, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-5041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B5**
**1008191-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 693 U | 693 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |

## Sample: J1C0B5, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B5**
**1008191-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Carbazole | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Chrysene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Fluorene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Isophorone | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Naphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Phenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 3** | **266** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 2** | **180** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **700** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| **TIC:Alkane 1** | **201** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **86600** A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| Tributylphosphate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *56 %* | *25-121* | | | *L008337* | *08/31/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *52 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *60 %* | *23-120* | | | *L008337* | *08/31/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *63 %* | *30-115* | | | *L008337* | *08/31/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *51 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *76 %* | *18-137* | | | *L008337* | *08/31/2010* | *09/03/2010* | *8270C* |

## Sample: J1C0B6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 10:34 |

**J1C0B6**
**1008191-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 683 U | 683 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B6**
**1008191-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1710 U | 1710 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 3** | **632** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **641** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **1710** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 4** | **619** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **163000** A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 341 U | 341 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *130 % ** | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *109 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *145 % ** | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *169 % ** | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *89 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *225 % ** | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B7**
**1008191-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1650 U | 1650 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1650 U | 1650 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 659 U | 659 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1650 U | 1650 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1650 U | 1650 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1650 U | 1650 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 329 U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B7**
**1008191-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1650 | U | 1650 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **1840** | B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Alkane 1** | **388** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 3** | **113000** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **890** | A, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 2** | **266** | A, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 329 | U | 329 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *57 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *81 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *72 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *122 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B8, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessler | 09/13/2010 10:34 |

**J1C0B8**
**1008191-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1760 U | 1760 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1760 U | 1760 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 704 U | 704 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1760 U | 1760 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1760 U | 1760 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1760 U | 1760 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 352 U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B8, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B8**
**1008191-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1760 | U | 1760 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **242** | **J** | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **1520** | **B, J** | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 2** | **63200** | **A, B, J** | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **235** | **A, J** | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 352 | U | 352 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *54 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *47 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *65 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *72 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *50 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *84 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 10:34 |

**J1C0B9**
**1008191-05 (Soil)**

| Analyte | Result | Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 | U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1740 | U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 695 | U | 695 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1740 | U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1740 | U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1740 | U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 348 | U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0B9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0B9**
**1008191-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1740 U | 1740 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 3** | **301** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **374** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **1020** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Alkane 1** | **331** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **104000** A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 348 U | 348 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *60 %* | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *59 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *67 %* | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *75 %* | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *29 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *100 %* | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0C0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 09/13/2010 10:34 |

**J1C0C0**
**1008191-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 694 U | 694 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0C0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Ferrni Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 10:34 |

**J1C0C0**
**1008191-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1730 U | 1730 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **3780** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **1300** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 2** | **87700** A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **1090** A, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 347 U | 347 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *71 %* | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *61 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *82 %* | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *90 %* | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *45 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *117 %* | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0C2, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0C2**
**1008191-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1670 U | 1670 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1670 U | 1670 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 667 U | 667 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1670 U | 1670 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1670 U | 1670 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1670 U | 1670 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 333 U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C0C2, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C0C2**
**1008191-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **Chrysene** | **69.5** | J | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1670 | U | 1670 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 4** | **786** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **849** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **759** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 3** | **1340** | J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **53300** | A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 333 | U | 333 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *69 %* | | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *56 %* | | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *83 %* | | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *90 %* | | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *68 %* | | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *106 %* | | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C1D3, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C1D3**
**1008191-08 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,2-Dichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,3-Dichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 1,4-Dichlorobenzene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,5-Trichlorophenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4,6-Trichlorophenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dichlorophenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dimethylphenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,4-Dinitrotoluene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2,6-Dinitrotoluene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chloronaphthalene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Chlorophenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylnaphthalene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Methylphenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 2-Nitrophenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 690 U | 690 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloro-3-methylphenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chloroaniline | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 3- and/or 4-Methylphenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitroaniline | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| 4-Nitrophenol | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Acenaphthylene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Anthracene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benz[a]anthracene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[a] pyrene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[b] fluoranthene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[g,h,i] perylene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Benzo[k] fluoranthene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroethyl) ether | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |

## Sample: J1C1D3, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 10:34 |

**J1C1D3**
**1008191-08 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Carbazole | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Chrysene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenz[a,h]anthracene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dibenzofuran | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Diethyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Dimethyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-butyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Di-n-octyl Phthalate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluoranthene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Fluorene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobenzene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorobutadiene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachlorocyclopentadiene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Hexachloroethane | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Isophorone | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Naphthalene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Nitrobenzene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| N-Nitrosodiphenylamine | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pentachlorophenol | 1720 U | 1720 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenanthrene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Phenol | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Pyrene | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 1** | **981** B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Unknown 2** | **235** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Alkane 1** | **246** J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 2** | **81600** A, B, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| **TIC:Aldol 1** | **397** A, J | | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| Tributylphosphate | 345 U | 345 | ug/kg dry | 1 | L008337 | 08/31/2010 | 09/05/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *51 %* | *25-121* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *51 %* | *24-113* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *54 %* | *23-120* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *61 %* | *30-115* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *40 %* | *19-122* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *81 %* | *18-137* | | | *L008337* | *08/31/2010* | *09/05/2010* | *8270C* |

## Sample: J1C0B5 - J1C0B7, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: [none] | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/31/2010 20:03 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C0B5 (1008191-01) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *92 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *111 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| Aroclor 1016 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1221 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1232 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1242 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1248 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1254 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1260 | 13.5 U | 13.5 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| **J1C0B6 (1008191-02) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *91 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *114 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| **J1C0B7 (1008191-03) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *91 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *101 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| Aroclor 1016 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1221 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1232 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1242 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1248 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1254 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1260 | 13.6 U | 13.6 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |

## Sample: J1C0B8 - J1C0C0, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: [none]<br>Project Manager: Joan Kessner | Reported:<br>08/31/2010 20:03 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C0B8 (1008191-04) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *97 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *112 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| Aroclor 1016 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1221 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1232 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1242 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1248 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1254 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1260 | 14.2 U | 14.2 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| **J1C0B9 (1008191-05) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *96 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *115 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/30/2010* | *8082* |
| Aroclor 1016 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1221 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1232 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1242 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1248 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1254 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| Aroclor 1260 | 13.3 U | 13.3 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/30/2010 | 8082 |
| **J1C0C0 (1008191-06) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *106 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/31/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *107 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/31/2010* | *8082* |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |

## Sample: J1C0C2 - J1C1D3, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: [none] | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/31/2010 20:03 |

### Polychlorinated Biphenyls by SW846 8082
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C0C2 (1008191-07) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *95 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/31/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *119 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/31/2010* | *8082* |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| **Aroclor 1248** | 5.43 J | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| **J1C1D3 (1008191-08) Soil** | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *99 %* | *43-144* | | | *L008288* | *08/26/2010* | *08/31/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *112 %* | *52-141* | | | *L008288* | *08/26/2010* | *08/31/2010* | *8082* |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| **Aroclor 1248** | 9.35 J | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | L008288 | 08/26/2010 | 08/31/2010 | 8082 |

## Sample: J1C0B5, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B5**
**1008191-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5740** | | 3.32 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.329** | B | 0.398 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **4.45** | | 0.664 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **64.3** | | 0.332 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.231** | | 0.133 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.950** | B | 1.33 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0621** | B | 0.133 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **6350** | | 66.4 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **5.83** | | 0.133 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.11** | | 1.33 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.6** | | 0.664 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **24400** | | 13.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.90** | | 0.332 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **4200** | | 49.8 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **325** | | 3.32 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.455** | B | 1.33 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **7.35** | | 2.65 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **763** | | 265 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.199 | U | 0.199 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **685** | | 1.33 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.133 | U | 0.133 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **404** | | 33.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **72.4** | | 1.66 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **43.8** | | 6.64 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **26.6** | | 3.32 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0281 | U | 0.0281 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B5, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B5**
**1008191-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.303** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B6, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B6**
**1008191-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4810** | | 3.98 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.362** | B | 0.478 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **3.39** | | 0.796 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **48.9** | | 0.398 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.201** | | 0.159 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.610** | B | 1.59 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0638** | B | 0.159 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **6150** | | 79.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **4.17** | | 0.159 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **6.37** | | 1.59 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **10.2** | | 0.796 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **22300** | | 15.9 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.91** | | 0.398 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3730** | | 59.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **281** | | 3.98 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.426** | B | 1.59 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **6.41** | | 3.18 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **638** | | 318 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.239 | U | 0.239 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **625** | | 1.59 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.159 | U | 0.159 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **281** | | 39.8 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **67.6** | | 1.99 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **42.1** | | 7.96 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **23.8** | | 3.98 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0243 | U | 0.0243 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B6, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B6**
**1008191-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.303** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B7, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/14/2010 07:14 |

**J1C0B7**
**1008191-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5110** | | 4.28 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.487** | B | 0.513 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.82** | | 0.856 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **59.6** | | 0.428 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.228** | | 0.171 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.733** | B | 1.71 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0673** | B | 0.171 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **6300** | | 85.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **7.92** | | 0.171 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.95** | | 1.71 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.9** | | 0.856 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **25400** | | 17.1 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.63** | | 0.428 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **4780** | | 64.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **327** | | 4.28 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.438** | B | 1.71 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **13.5** | | 3.42 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **667** | | 342 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.257 | U | 0.257 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **736** | | 1.71 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.171 | U | 0.171 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **298** | | 42.8 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **72.9** | | 2.14 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **46.4** | | 8.56 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **28.2** | | 4.28 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0265 | U | 0.0265 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B7, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B7**
**1008191-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.336** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B8, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B8**
**1008191-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5340** | | 3.56 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.272** | B | 0.427 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **3.06** | | 0.712 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **51.8** | | 0.356 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.224** | | 0.142 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.684** | B | 1.42 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0689** | B | 0.142 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **5380** | | 71.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **5.97** | | 0.142 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **5.83** | | 1.42 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **10.5** | | 0.712 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **21100** | | 14.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.96** | | 0.356 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3680** | | 53.4 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **281** | | 3.56 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.371** | B | 1.42 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **6.79** | | 2.85 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **811** | | 285 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.213 | U | 0.213 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **717** | | 1.42 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.142 | U | 0.142 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **246** | | 35.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **62.1** | | 1.78 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **42.2** | | 7.12 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **22.0** | | 3.56 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0295 | U | 0.0295 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B8, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B8**
**1008191-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.304** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B9, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B9**
**1008191-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4970** | | 4.91 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.322** | B | 0.589 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **3.11** | | 0.982 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **70.8** | | 0.491 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.210** | | 0.196 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.652** | B | 1.96 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0953** | B | 0.196 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **5720** | | 98.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **5.82** | | 0.196 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.43** | | 1.96 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.8** | | 0.982 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **24600** | | 19.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **3.05** | | 0.491 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **4080** | | 73.6 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **385** | | 4.91 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.454** | B | 1.96 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **7.45** | | 3.93 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **658** | | 393 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.295 | U | 0.295 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **580** | | 1.96 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.196 | U | 0.196 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **316** | | 49.1 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **78.5** | | 2.45 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **48.1** | | 9.82 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **27.2** | | 4.91 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0308 | U | 0.0308 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0B9, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0B9**
**1008191-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.285** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0C0, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/14/2010 07:14 |

**J1C0C0**
**1008191-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5600** | | 5.18 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.380** | B | 0.621 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.72** | | 1.04 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **56.8** | | 0.518 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.224** | | 0.207 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.668** | B | 2.07 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0670** | B | 0.207 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **5880** | | 104 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **4.01** | | 0.207 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **7.82** | | 2.07 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **12.9** | | 1.04 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **25700** | | 20.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.75** | | 0.518 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **4130** | | 77.7 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **319** | | 5.18 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.493** | B | 2.07 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **7.09** | | 4.14 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **696** | | 414 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.311 | U | 0.311 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **821** | | 2.07 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.207 | U | 0.207 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **344** | | 51.8 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **76.9** | | 2.59 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **49.5** | | 10.4 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **29.5** | | 5.18 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0272 | U | 0.0272 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0C0, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Jean Kessner | 09/14/2010 07:14 |

**J1C0C0**

**1008191-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.278** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0C2, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0C2**
**1008191-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4900** | | 3.82 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Antimony** | **0.335** | B | 0.458 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Arsenic** | **2.53** | | 0.763 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Barium** | **60.7** | | 0.382 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Beryllium** | **0.206** | | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Boron** | **0.539** | B | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cadmium** | **0.0676** | B | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Calcium** | **5230** | | 76.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Chromium** | **4.58** | | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Cobalt** | **6.77** | | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Copper** | **11.4** | | 0.763 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Iron** | **22400** | | 15.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Lead** | **2.71** | | 0.382 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Magnesium** | **3540** | | 57.3 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Manganese** | **303** | | 3.82 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Molybdenum** | **0.388** | B | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Nickel** | **6.44** | | 3.05 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Potassium** | **685** | | 305 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Selenium | 0.229 | U | 0.229 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Silicon** | **608** | | 1.53 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Silver | 0.153 | U | 0.153 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Sodium** | **300** | | 38.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Vanadium** | **68.4** | | 1.91 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zinc** | **44.2** | | 7.63 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| **Zirconium** | **24.9** | | 3.82 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/08/2010 | 6010B |
| Mercury | 0.0287 | U | 0.0287 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C0C2, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C0C2**
**1008191-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.291** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C1D3, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C1D3**
**1008191-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5160** | | 4.30 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Antimony** | **0.348** | B | 0.516 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Arsenic** | **2.66** | | 0.860 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Barium** | **67.2** | | 0.430 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Beryllium** | **0.214** | | 0.172 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Boron** | **0.587** | B | 1.72 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Cadmium** | **0.0718** | B | 0.172 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Calcium** | **6040** | | 86.0 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Chromium** | **4.10** | | 0.172 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Cobalt** | **7.15** | | 1.72 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Copper** | **11.4** | | 0.860 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Iron** | **24200** | | 17.2 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Lead** | **2.78** | | 0.430 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Magnesium** | **3790** | | 64.5 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Manganese** | **336** | | 4.30 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Molybdenum** | **0.451** | B | 1.72 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Nickel** | **7.08** | | 3.44 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Potassium** | **716** | | 344 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| Selenium | 0.258 | U | 0.258 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Silicon** | **913** | | 1.72 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| Silver | 0.172 | U | 0.172 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Sodium** | **346** | | 43.0 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Vanadium** | **72.3** | | 2.15 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Zinc** | **45.0** | | 8.60 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| **Zirconium** | **28.4** | | 4.30 | mg/kg dry | 1 | L009020 | 09/02/2010 | 09/09/2010 | 6010B |
| Mercury | 0.0242 | U | 0.0242 | mg/kg dry | 1 | L009097 | 09/10/2010 | 09/13/2010 | 7471A |

## Sample: J1C1D3, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 07:14 |

**J1C1D3**
**1008191-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.320** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009070 | 09/08/2010 | 09/09/2010 | 7470 |

## Sample: J1C0B5 - J1C0B6, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 20:48 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C0B5 (1008191-01) Soil** | | | | | | | | | |
| **%Solids** | **94.2** | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **36.9** | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.0 B** | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.8 U | 1.8 | 9.2 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **62.6** | 0.9 | 4.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.20 B** | 0.11 | 0.53 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.07 B** | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 0.53 U | 0.53 | 1.06 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9014 |
| **Sulfide, total** | **138** | 4.25 | 21.2 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9034 |
| **pH** | **8.22** | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B6 (1008191-02) Soil** | | | | | | | | | |
| **%Solids** | **95.2** | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **28.3** | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 U | 2.0 | 9.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **13.2** | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate/Nitrite as N | 0.10 U | 0.10 | 0.51 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.11 B** | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 0.50 U | 0.50 | 1.01 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9014 |

# Sample: J1C0B6 - J1C0B8, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 20:48 |

## Wet Chemistry
## Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C0B6 (1008191-02) Soil** | | | | | | | | | | |
| **Sulfide, total** | **13.3** | B | 4.20 | 21.0 | mg/kg dry | 1 | L009094 | 08/30/2010 | 08/30/2010 | SW846 9034 |
| **pH** | **8.40** | | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B7 (1008191-03) Soil** | | | | | | | | | | |
| **%Solids** | **94.3** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | **1.0** | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **54.2** | | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.2** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.5 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.4** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.13** | B | 0.09 | 0.45 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.14** | B | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 0.52 | U | 0.52 | 1.04 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9014 |
| **Sulfide, total** | **9.17** | B | 4.24 | 21.2 | mg/kg dry | 1 | L009094 | 08/30/2010 | 08/30/2010 | SW846 9034 |
| **pH** | **8.19** | | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B8 (1008191-04) Soil** | | | | | | | | | | |
| **%Solids** | **92.5** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **93.8** | | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **21.1** | | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.21** | B | 0.10 | 0.49 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 | U | 0.05 | 0.22 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |

# Sample: J1C0B8 - J1C0C0, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 20:48 |

## Wet Chemistry
## Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C0B8 (1008191-04) Soil** | | | | | | | | | | |
| Cyanide | 0.52 | U | 0.52 | 1.04 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9014 |
| **Sulfide, total** | **9.75** | B | 4.33 | 21.6 | mg/kg dry | 1 | L009094 | 08/30/2010 | 08/30/2010 | SW846 9034 |
| **pH** | **8.08** | | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0B9 (1008191-05) Soil** | | | | | | | | | | |
| **%Solids** | **94.3** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 5.0 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **42.9** | | 1.0 | 5.0 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 5.0 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.7** | B | 1.0 | 5.0 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 5.0 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 | U | 2.0 | 9.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **3.0** | B | 1.0 | 5.0 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.49** | B | 0.10 | 0.52 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.08** | B | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 0.52 | U | 0.52 | 1.03 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9014 |
| Sulfide, total | 42.4 | U | 42.4 | 106 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **8.26** | | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0C0 (1008191-06) Soil** | | | | | | | | | | |
| **%Solids** | **94.7** | | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **15.4** | | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.3** | B | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | **2.0** | B | 2.0 | 9.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **7.0** | | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.29** | B | 0.10 | 0.49 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |

## Sample: J1C0C0 - J1C1D3, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2235<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 20:48 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C0C0 (1008191-06) Soil** | | | | | | | | | |
| **Hexavalent Chromium** | **0.13** B | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide | 0.53 U | 0.53 | 1.06 | mg/kg dry | 1 | L009004 | 08/30/2010 | 08/30/2010 | SW846 9014 |
| Sulfide, total | 42.3 U | 42.3 | 106 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **8.44** | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C0C2 (1008191-07) Soil** | | | | | | | | | |
| **%Solids** | **94.9** | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **36.3** | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 U | 1.9 | 9.6 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.6** B | 1.0 | 4.8 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.33** B | 0.09 | 0.47 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.07** B | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide (total) | 0.52 U | 0.52 | 1.04 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 42.1 U | 42.1 | 105 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **8.28** | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |
| **J1C1D3 (1008191-08) Soil** | | | | | | | | | |
| **%Solids** | **95.3** | 0.1 | 0.1 | % by Weight | 1 | L008336 | 08/30/2010 | 08/30/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Chloride** | **35.8** | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.1** B | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 U | 2.0 | 9.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.6** B | 1.0 | 4.9 | mg/kg dry | 1 | L009190 | 09/14/2010 | 09/14/2010 | EPA 300.0 (1993) |

## Sample: J1C1D3, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 20:48 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C1D3 (1008191-08) Soil** | | | | | | | | | | |
| **Nitrate/Nitrite as N** | **0.42** | B | 0.09 | 0.47 | mg/kg dry | 1 | L009183 | 09/03/2010 | 09/03/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.12** | B | 0.05 | 0.21 | mg/kg dry | 1 | L008339 | 08/31/2010 | 08/31/2010 | SW846 7196A |
| Cyanide (total) | 0.50 | U | 0.50 | 1.01 | mg/kg dry | 1 | L009116 | 08/31/2010 | 08/31/2010 | SW846 9014 |
| Sulfide, total | 42.0 | U | 42.0 | 105 | mg/kg dry | 1 | L009138 | 09/02/2010 | 09/02/2010 | SW846 9034 |
| **pH** | **8.26** | | 0.10 | 0.10 | pH Units | 1 | L009002 | 08/31/2010 | 08/31/2010 | SW846 9045D |

## Sample: J1C0B5 – J1C0B7, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCH-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/08/2010 11:04 |

### J1C0B5
**1008191-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3480 U | 3480 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/06/2010 | 8015M |
| **Motor Oil** | **155000** | 10500 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/06/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *100 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/06/2010* | *8015M* |
| Kerosene | 10500 U | 10500 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/06/2010 | 8015M |

### J1C0B6
**1008191-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3370 U | 3370 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| **Motor Oil** | **87800** | 10100 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *54 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 10100 U | 10100 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

### J1C0B7
**1008191-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3280 U | 3280 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| **Motor Oil** | **13500** | 9830 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *90 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 9830 U | 9830 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

## Sample: J1C0B8 – J1C0C0, Petroleum Hydrocarbons

### J1C0B8

**1008191-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3570 U | 3570 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| **Motor Oil** | **47500** | 10700 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *177 % ** | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 10700 U | 10700 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

### J1C0B9

**1008191-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3510 U | 3510 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| **Motor Oil** | **201000** | 10500 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *105 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 10500 U | 10500 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

### J1C0C0

**1008191-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3430 U | 3430 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| Motor Oil | 10300 U | 10300 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *86 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

## Sample: J1C0C2 – J1C1D3, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2235 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/08/2010 11:04 |

### J1C0C2
**1008191-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 16400 U | 16400 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| **Motor Oil** | **480000** D | 49100 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *82 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/08/2010* | *8015M* |
| Kerosene | 49100 U | 49100 | ug/kg dry | 5 | L009011 | 09/01/2010 | 09/08/2010 | 8015M |

### J1C1D3
**1008191-08 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 3220 U | 3220 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| **Motor Oil** | **89600** | 9650 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *94 %* | *39-129* | | | *L009011* | *09/01/2010* | *09/07/2010* | *8015M* |
| Kerosene | 9650 U | 9650 | ug/kg dry | 1 | L009011 | 09/01/2010 | 09/07/2010 | 8015M |

# 618-10-13 Test Pit Asbestos
# Sample: J1C081 and J1C1J4, Asbestos

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 242354_2 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | |
| Date: | 9/1/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L551V1AA** | **L551X1AA** | **L552F1AA** | **L552P1AA** | **L552W1AA** |
| **Client ID** | J1C080' | J1C087' | J1C081' | J1C082' | J1C083' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected", "TRA" stands for "<1%"

4

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 242354_3 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | |
| Date: | 9/1/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L552X1AA** | **L55211AA** | **L55241AA** | **L55291AA** | **L553D1AA** |
| **Client ID** | J1C084' | J1C085' | J1C086' | J1C1J3' | J1C1J4' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | TRA | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected", "TRA" stands for "<1%"

5

# LABORATORY DATA RESULTS

## 618-10-20 TEST PIT

# 618-10-20 Surge Pit Radionuclide Analytical Results
# Sample: J1C1F1, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2288

7884-008 J1C1F1

DATA SHEET

| | | | | |
|---|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford | SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | |
| Lab sample id | S009002-08 | Client sample id | J1C1F1 | |
| Dept sample id | 7884-008 | Location/Matrix | 618-10-20 Surge Pit Soil | SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 07:50 | 1343 g |
| % solids | 95.3 | Custody/SAF No | RC-154-032 | RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 1.67 | 2.3 | 3.86 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.14 | 0.45 | 0.732 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.031 | 0.14 | 0.410 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.668 | 0.25 | 0.189 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.060 | 0.060 | 0.229 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.297 | 0.15 | 0.189 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.11 | 0.410 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.11 | 0.410 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.4 | 0.34 | 0.151 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.015 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.023 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.322 | 0.028 | 0.028 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.551 | 0.064 | 0.061 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.034 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.050 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.051 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.483 | 0.019 | 0.016 | | | GAM |
| Thorium 232 | TH-232 | 0.551 | 0.064 | 0.061 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.079 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.84 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.023 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

**DATA SHEETS**
Page 8
**SUMMARY DATA SECTION**
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## Sample: J1C1F2, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2288**

7884-009 J1C1F2

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-09 | Client sample id | J1C1F2 |
| Dept sample id | 7884-009 | Location/Matrix | 618-10-20 Surge Pit Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 12:15 1282 g |
| % solids | 96.8 | Custody/SAF No | RC-154-032 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 1.88 | 2.3 | 3.85 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.19 | 0.48 | 0.779 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.109 | 0.16 | 0.418 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.426 | 0.26 | 0.251 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.040 | 0.079 | 0.304 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.295 | 0.20 | 0.251 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.14 | 0.334 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.035 | 0.070 | 0.266 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 10.7 | 0.30 | 0.120 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.011 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.012 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.333 | 0.027 | 0.025 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.518 | 0.060 | 0.057 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.035 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.040 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.045 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.526 | 0.021 | 0.019 | | | GAM |
| Thorium 232 | TH-232 | 0.518 | 0.060 | 0.057 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.088 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.48 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.056 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

**DATA SHEETS**
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**SUMMARY DATA SECTION**
Page 20

## Sample: J1C1F3, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2288

7884-010 J1C1F3

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-10 | Client sample id | J1C1F3 |
| Dept sample id | 7884-010 | Location/Matrix | 618-10-20 Surge Pit Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 12:26 1441 g |
| % solids | 97.6 | Custody/SAF No | RC-154-032 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -3.47 | 2.0 | 3.71 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.11 | 0.53 | 0.863 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.005 | 0.14 | 0.399 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.324 | 0.20 | 0.248 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0 | 0.079 | 0.300 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.551 | 0.26 | 0.248 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | -0.030 | 0.060 | 0.230 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | -0.030 | 0.060 | 0.230 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 10.6 | 0.36 | 0.135 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.016 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.015 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.364 | 0.030 | 0.027 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.561 | 0.071 | 0.063 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.041 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.055 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.114 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.466 | 0.020 | 0.017 | | | GAM |
| Thorium 232 | TH-232 | 0.561 | 0.071 | 0.063 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.090 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.96 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.057 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

**DATA SHEETS**
Page 10
**SUMMARY DATA SECTION**
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## 618-10-20 Surge Pit Gamma Energy/Spectrum Analysis (GEA) Results
## Sample: J1CK2, GEA

Apex™

8/27/2010 7:53:35AM Page 1 of 4

Analysis Report for RCF25427

J1C1K2 SAF:RC-154 618-10-20 SURGE PIT SOIL PILE #1 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25427 |
| Sample Description | : J1C1K2 SAF:RC-154 618-10-20 SURGE PIT SOIL PILE #1 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.490E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 7:50:00AM |
| Acquisition Started | : 8/27/2010 6:53:22AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.8 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 6006 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|
| K-40 | 0.979 | 5.43E+00 | 7.18E-01 | |
| TH-232d | 0.677 | 2.00E-01 | 3.42E-02 | |

## Sample: J1C1K3, GEA

Apex™

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Analysis Report for RCF25428

J1C1K3 SAF:RC-154 618-10-20 SURGE PIT SOIL PILE #2 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25428 |
| Sample Description | : J1C1K3 SAF:RC-154 618-10-20 SURGE PIT SOIL PILE #2 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.800E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 12:15:00PM |
| Acquisition Started | : 8/27/2010 6:53:27AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 6007 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.989 | 5.08E+00 | 6.32E-01 | |
| | PB-212 | | 0.711 | 1.33E-01 | 2.60E-02 | |
| | RA-226d | @ | 0.789 | 1.51E-01 | 2.37E-02 | |
| | TH-232d | | 0.681 | 1.43E-01 | 2.04E-02 | |
| X | U-235 | | 0.543 | | | |

## Sample: J1C1K4, GEA

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Analysis Report for RCF25429

J1C1K4 SAF:RC-154 618-10-20 SURGE PIT SOIL PILE #3 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25429 |
| Sample Description | : J1C1K4 SAF:RC-154 618-10-20 SURGE PIT SOIL PILE #3 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.920E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 12:26:00PM |
| Acquisition Started | : 8/27/2010 7:57:20AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.8 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effical SN80398-238 |
| Sample Number | : 6009 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.983 | 4.61E+00 | 6.39E-01 | |
| RA-226d | @ | 0.621 | 1.41E-01 | 2.98E-02 | |
| TH-232d | | 0.848 | 1.27E-01 | 2.84E-02 | |

# 618-10-20 Surge Pit Chemical Analytical Results
# Sample: J1C1F1, VOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1F1**
**1009009-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.66 | U | 5.66 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 11.3 | U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 11.3 | U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.3 | U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **13.2** | | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.66 | U | 5.66 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 9.43 | U | 9.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 9.43 | U | 9.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 9.43 | U | 9.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.66 | U | 5.66 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 9.43 | U | 9.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.71 | U | 4.71 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *86 %* | | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *93 %* | | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *113 %* | | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1F2, VOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/20/2010 15:20 |

**J1C1F2**
**1009009-09 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.49 | U | 5.49 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **11.2** | | **11.0** | **ug/kg dry** | **1** | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.49 | U | 5.49 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 9.15 | U | 9.15 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 9.15 | U | 9.15 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 9.15 | U | 9.15 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.49 | U | 5.49 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 9.15 | U | 9.15 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.57 | U | 4.57 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **TIC:TIC:Methylene Chloride** | **8.65** | **J** | | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *100 %* | | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *92 %* | | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *116 %* | | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1F3, VOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1F3**
**1009009-10 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.43 | U | 5.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 10.9 | U | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 10.9 | U | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.9 | U | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **10.1** | **J** | 10.9 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.43 | U | 5.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 9.06 | U | 9.06 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 9.06 | U | 9.06 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 9.06 | U | 9.06 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.43 | U | 5.43 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 9.06 | U | 9.06 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.53 | U | 4.53 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *103 %* | | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *92 %* | | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *116 %* | | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1F1, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1F1**
**1009009-08 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 1,2-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 1,3-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 1,4-Dichlorobenzene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,4,5-Trichlorophenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,4,6-Trichlorophenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,4-Dichlorophenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,4-Dimethylphenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,4-Dinitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,4-Dinitrotoluene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2,6-Dinitrotoluene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2-Chloronaphthalene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2-Chlorophenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2-Methylnaphthalene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2-Methylphenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 2-Nitrophenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 684 U | 684 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 3-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4-Chloro-3-methylphenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4-Chloroaniline | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 3- and/or 4-Methylphenol | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4-Nitroaniline | 1710 U | 1710 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| 4-Nitrophenol | 1710 U | 1710 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Acenaphthene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Acenaphthylene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Anthracene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Benz[a]anthracene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Benzo[a] pyrene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Benzo[b] fluoranthene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Benzo[g,h,i] perylene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Benzo[k] fluoranthene | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Bis(2-chloroethyl) ether | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 342 U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |

## Sample: J1C1F1, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1F1**
**1009009-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Carbazole | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Chrysene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Dibenz[a,h]anthracene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Dibenzofuran | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Diethyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Dimethyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Di-n-butyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Di-n-octyl Phthalate | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Fluoranthene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Fluorene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Hexachlorobenzene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Hexachlorobutadiene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Hexachlorocyclopentadiene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Hexachloroethane | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Isophorone | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Naphthalene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Nitrobenzene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| N-Nitrosodiphenylamine | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Pentachlorophenol | 1710 | U | 1710 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Phenanthrene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Phenol | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Pyrene | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| **TIC:Unknown 3** | **509** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| **TIC:Unknown 2** | **492** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| **TIC:Unknown 1** | **786** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| **TIC:Aldol 2** | **81200** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| **TIC:Aldol 1** | **597** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| Tributylphosphate | 342 | U | 342 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/12/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *59 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/12/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *68 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/12/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *73 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/12/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *73 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/12/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *59 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/12/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *98 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/12/2010* | *8270C* |

## Sample: J1C1F2, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1F2**
**1009009-09 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,2-Dichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,3-Dichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,4-Dichlorobenzene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4,5-Trichlorophenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4,6-Trichlorophenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dichlorophenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dimethylphenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dinitrophenol | 1690 U | 1690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dinitrotoluene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,6-Dinitrotoluene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Chloronaphthalene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Chlorophenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Methylnaphthalene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Methylphenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Nitrophenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 676 U | 676 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chloro-3-methylphenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chloroaniline | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3- and/or 4-Methylphenol | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Nitroaniline | 1690 U | 1690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Nitrophenol | 1690 U | 1690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Acenaphthene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Acenaphthylene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Anthracene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benz[a]anthracene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[a] pyrene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[b] fluoranthene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[g,h,i] perylene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[k] fluoranthene | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroethyl) ether | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 338 U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |

## Sample: J1C1F2, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1F2**
**1009009-09 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Carbazole | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Chrysene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dibenz[a,h]anthracene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dibenzofuran | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Diethyl Phthalate | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dimethyl Phthalate | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Di-n-butyl Phthalate | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Di-n-octyl Phthalate | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Fluoranthene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Fluorene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorobenzene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorobutadiene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorocyclopentadiene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachloroethane | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Isophorone | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Naphthalene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Nitrobenzene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| N-Nitrosodiphenylamine | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Pentachlorophenol | 1690 | U | 1690 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Phenanthrene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Phenol | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Pyrene | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 2** | **1170** | **B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Trichloro-1-propene** | **470** | **J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 1** | **778** | **J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 2** | **116000** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 1** | **807** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Tributylphosphate | 338 | U | 338 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *68 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *74 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *84 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *67 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *117 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |

## Sample: J1C1F3, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1F3**
**1009009-10 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,2-Dichlorobenzene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,3-Dichlorobenzene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 1,4-Dichlorobenzene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,5-Trichlorophenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4,6-Trichlorophenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dichlorophenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dimethylphenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrophenol | 1670 U | 1670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,4-Dinitrotoluene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2,6-Dinitrotoluene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chloronaphthalene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Chlorophenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylnaphthalene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Methylphenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitroaniline | 1670 U | 1670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 2-Nitrophenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 670 U | 670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3-Nitroaniline | 1670 U | 1670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloro-3-methylphenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chloroaniline | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 3- and/or 4-Methylphenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitroaniline | 1670 U | 1670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| 4-Nitrophenol | 1670 U | 1670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Acenaphthylene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Anthracene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benz[a]anthracene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[a] pyrene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[b] fluoranthene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[g,h,i] perylene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Benzo[k] fluoranthene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroethyl) ether | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |

## Sample: J1C1F3, SVOA

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1F3**
**1009009-10 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Carbazole | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Chrysene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenz[a,h]anthracene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dibenzofuran | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Diethyl Phthalate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Dimethyl Phthalate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-butyl Phthalate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Di-n-octyl Phthalate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluoranthene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Fluorene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobenzene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorobutadiene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachlorocyclopentadiene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Hexachloroethane | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Isophorone | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Naphthalene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Nitrobenzene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| N-Nitrosodiphenylamine | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pentachlorophenol | 1670 U | 1670 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenanthrene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Phenol | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Pyrene | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 1** | **181** J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Unknown 2** | **285** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 2** | **77300** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| **TIC:Aldol 1** | **301** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| Tributylphosphate | 335 U | 335 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/09/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *58 %* | *25-121* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *59 %* | *24-113* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *66 %* | *23-120* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *65 %* | *30-115* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *49 %* | *19-122* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *73 %* | *18-137* | | | *L009037* | *09/03/2010* | *09/09/2010* | *8270C* |

## Sample: J1C1F1 - J1C1F2, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/13/2010 19:59 |

### J1C1F1
**1009009-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | | |
| Aroclor 1016 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.8 | U | 13.8 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *123 %* | | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *113 %* | | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

### J1C1F2
**1009009-09 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | | |
| Aroclor 1016 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.0 | U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *123 %* | | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *119 %* | | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

## Sample: J1C1F3, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 19:59 |

**J1C1F3**
**1009009-10 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 12.4 U | 12.4 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *101 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *98 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

## Sample: J1C1F1, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F1**
**1009009-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4870** | | 3.99 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.479 | U | 0.479 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.30** | | 0.798 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **60.5** | | 0.399 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.242** | | 0.160 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.765** | B | 1.60 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.145** | B | 0.160 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **5970** | | 79.8 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **4.72** | | 0.160 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **7.23** | | 1.60 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **14.3** | | 0.798 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **25800** | | 16.0 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **2.58** | | 0.399 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **4040** | | 59.8 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **311** | | 3.99 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.395** | B | 1.60 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **6.50** | | 3.19 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **853** | | 319 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.239 | U | 0.239 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **384** | | 1.60 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/13/2010 | 6010B |
| Silver | 0.160 | U | 0.160 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **248** | | 39.9 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **75.5** | | 1.99 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **49.9** | | 7.98 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **27.5** | | 3.99 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0267 | U | 0.0267 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1F1, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F1**
**1009009-08 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.363** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1F2, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F2**
**1009009-09 (Soil)**

**Lionville Laboratory**

**Metals by SW846 6000/7000 series**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **4220** | | 3.28 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.394 | U | 0.394 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **1.73** | | 0.657 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **57.2** | | 0.328 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.198** | | 0.131 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.585** | B | 1.31 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.138** | | 0.131 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **5850** | | 65.7 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **3.95** | | 0.131 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **7.09** | | 1.31 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **12.2** | | 0.657 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **24100** | | 13.1 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **2.31** | | 0.328 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **3900** | | 49.3 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **294** | | 3.28 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.378** | B | 1.31 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **5.79** | | 2.63 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **626** | | 263 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.197 | U | 0.197 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **249** | | 1.31 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/13/2010 | 6010B |
| Silver | 0.131 | U | 0.131 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **262** | | 32.8 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **72.6** | | 1.64 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **46.9** | | 6.57 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **25.3** | | 3.28 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0243 | U | 0.0243 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1F2, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F2**
**1009009-09 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.347** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1F3, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F3**
**1009009-10 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4490** | | 3.73 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.448 | U | 0.448 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.13** | | 0.746 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **59.8** | | 0.373 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.209** | | 0.149 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.638** | B | 1.49 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.149** | B | 0.149 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **6030** | | 74.6 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **5.67** | | 0.149 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **7.85** | | 1.49 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **13.2** | | 0.746 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **25300** | | 14.9 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **2.56** | | 0.373 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **4200** | | 55.9 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **334** | | 3.73 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.438** | B | 1.49 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **8.98** | | 2.98 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **612** | | 298 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.224 | U | 0.224 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **270** | | 1.49 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/13/2010 | 6010B |
| Silver | 0.149 | U | 0.149 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **228** | | 37.3 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **80.0** | | 1.86 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **49.9** | | 7.46 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **25.6** | | 3.73 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0277 | U | 0.0277 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1F3, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F3**
**1009009-10 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| **Barium** | **0.277** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/16/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1F1- J1C1F2, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 15:57 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1F1 (1009009-08) Soil** | | | | | | | | | |
| **%Solids** | **96.4** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **2560** | 49.7 | 249 | mg/kg dry | 50 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **8.9** | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 49.7 U | 49.7 | 249 | mg/kg dry | 50 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 U | 2.0 | 9.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **5.0** | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **2.01** | 0.10 | 0.50 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **J1C1F1 (1009009-08) Soil** | | | | | | | | | |
| **Hexavalent Chromium** | **0.10** B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 U | 0.51 | 1.03 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/07/2010 | SW846 9014 |
| Sulfide, total | 41.5 U | 41.5 | 104 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **7.61** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F2 (1009009-09) Soil** | | | | | | | | | |
| **%Solids** | **97.6** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 0.9 U | 0.9 | 4.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **2960** | 91.0 | 455 | mg/kg dry | 100 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 U | 0.9 | 4.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **9.0** | 0.9 | 4.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 91.0 U | 91.0 | 455 | mg/kg dry | 100 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.8 U | 1.8 | 9.1 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.0** B | 0.9 | 4.5 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **2.13** | 0.09 | 0.45 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.07** B | 0.05 | 0.20 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.52 U | 0.52 | 1.05 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/07/2010 | SW846 9014 |
| Sulfide, total | 41.0 U | 41.0 | 102 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **7.54** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1F3, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 15:57 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1F3 (1009009-10) Soil** | | | | | | | | | |
| **%Solids** | **98.6** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **312** | 10.0 | 50.1 | mg/kg dry | 10 | L009224 | 09/16/2010 | 09/17/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **2.8** B | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 10.0 U | 10.0 | 50.1 | mg/kg dry | 10 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 U | 2.0 | 10.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.5** B | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **J1C1F3 (1009009-10) Soil** | | | | | | | | | |
| **Nitrate/Nitrite as N** | **0.94** | 0.10 | 0.50 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.13** B | 0.05 | 0.20 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.54 U | 0.54 | 1.08 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/09/2010 | SW846 9014 |
| Sulfide, total | 40.6 U | 40.6 | 101 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **8.02** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1F1 - J1C1F3, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/15/2010 15:16 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1F1 (1009009-08) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *102 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3430 U | 3430 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Motor Oil | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10300 U | 10300 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1F2 (1009009-09) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *94 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3400 U | 3400 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Motor Oil | 10200 U | 10200 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10200 U | 10200 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1F3 (1009009-10) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *96 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3350 U | 3350 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Motor Oil | 10100 U | 10100 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10100 U | 10100 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |

# 618-10-20 Surge Pit Asbestos
# Sample: J1C1K2 - J1C1K4, Radionuclides

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 245383 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01116 |
| Date: | 9/8/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L6D421AA** | **L6D5C1AA** | **L6D5J1AA** | **L6D5M1AA** | **L6D531AA** |
| **Client ID** | J1C1K1' | J1C1K2' | J1C1K3' | J1C1K4' | J1C1J5' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | TRA | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | TRA | TRA | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

# 618-10-20 Test Pit Radionuclide Analytical Results
## Sample: J1C1D5, Radionuclides

**E B E R L I N E  S E R V I C E S / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2288**

7884-002 J1C1D5

**D A T A  S H E E T**

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford | SDG K2288 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S009002-02 | Client sample id | J1C1D5 | | |
| Dept sample id | 7884-002 | Location/Matrix | 618-10-20 Trench Soil | SOLID | |
| Received | 09/01/10 | Collected/Weight | 08/26/10 08:00 | 1381 g | |
| % solids | 94.8 | Custody/SAF No | RC-154-030 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0 | 2.3 | 3.96 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.14 | 0.48 | 0.773 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.033 | 0.14 | 0.402 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.531 | 0.20 | 0.150 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.143 | 0.096 | 0.182 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.570 | 0.24 | 0.150 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.038 | 0.15 | 0.291 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.228 | 0.15 | 0.291 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.6 | 0.33 | 0.130 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.013 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.013 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.339 | 0.030 | 0.028 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.554 | 0.061 | 0.058 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.035 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.043 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.042 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.541 | 0.022 | 0.020 | | | GAM |
| Thorium 232 | TH-232 | 0.554 | 0.061 | 0.058 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.092 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.67 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.052 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

## Sample: J1C1D6, Radionuclides

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K2288

7884-003 J1C1D6

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-03 | Client sample id | J1C1D6 |
| Dept sample id | 7884-003 | Location/Matrix | 618-10-20 Trench Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 08:05 1403 g |
| % solids | 94.1 | Custody/SAF No | RC-154-030 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.08 | 2.3 | 4.06 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.16 | 0.49 | 0.796 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.005 | 0.15 | 0.423 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.389 | 0.24 | 0.229 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.072 | 0.073 | 0.277 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.539 | 0.24 | 0.229 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.081 | 0.309 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.364 | 0.24 | 0.309 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 11.1 | 0.39 | 0.151 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.016 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.015 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.358 | 0.033 | 0.031 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.646 | 0.075 | 0.070 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.041 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.055 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.049 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.504 | 0.021 | 0.019 | | | GAM |
| Thorium 232 | TH-232 | 0.646 | 0.075 | 0.070 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.098 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.90 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.071 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1D7, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2288**

7884-004 J1C1D7

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-04 | Client sample id | J1C1D7 |
| Dept sample id | 7884-004 | Location/Matrix | 618-10-20 Trench Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 08:10 1385 g |
| % solids | 94.0 | Custody/SAF No | RC-154-030 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | 0.502 | 2.4 | 3.99 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.841 | 0.48 | 0.774 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.047 | 0.15 | 0.391 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.658 | 0.24 | 0.180 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.028 | 0.057 | 0.218 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.564 | 0.24 | 0.180 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0 | 0.15 | 0.370 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 3.09 | 0.75 | 0.296 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 10.8 | 0.52 | 0.192 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.026 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.025 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.389 | 0.044 | 0.042 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.553 | 0.10 | 0.110 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.062 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.083 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.070 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.549 | 0.029 | 0.028 | | | GAM |
| Thorium 232 | TH-232 | 0.553 | 0.10 | 0.110 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.140 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.82 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.254 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1D8, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2288**

7884-005 J1C1D8

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-05 | Client sample id | J1C1D8 |
| Dept sample id | 7884-005 | Location/Matrix | 618-10-20 Trench Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 08:15 1331 g |
| % solids | 94.3 | Custody/SAF No | RC-154-030 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.35 | 2.4 | 4.19 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 3.64 | 1.3 | 2.13 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.024 | 0.15 | 0.401 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.729 | 0.30 | 0.223 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.106 | 0.14 | 0.270 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.670 | 0.30 | 0.223 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.115 | 0.12 | 0.438 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0 | 0.11 | 0.438 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 11.3 | 0.58 | 0.183 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.017 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.030 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.374 | 0.038 | 0.034 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.567 | 0.080 | 0.075 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.048 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.061 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.049 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.548 | 0.027 | 0.023 | | | GAM |
| Thorium 232 | TH-232 | 0.567 | 0.080 | 0.075 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.110 | | U | GAM |
| Uranium 238 | U-238 | U | | 2.13 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.098 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

## Sample: J1C1D9, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2288**

7884-006 J1C1D9

**DATA SHEET**

| | | | |
|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford SDG K2288 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009002-06 | Client sample id | J1C1D9 |
| Dept sample id | 7884-006 | Location/Matrix | 618-10-20 Trench Soil SOLID |
| Received | 09/01/10 | Collected/Weight | 08/26/10 08:20 1366 g |
| % solids | 93.6 | Custody/SAF No | RC-154-030 RC-154 |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -1.55 | 2.3 | 4.11 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 1.12 | 0.63 | 1.02 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | -0.085 | 0.14 | 0.429 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.516 | 0.24 | 0.180 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.028 | 0.057 | 0.217 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.516 | 0.24 | 0.180 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.074 | 0.15 | 0.281 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | 0.404 | 0.30 | 0.281 | 1.00 | | PU |
| Potassium 40 | 13966-00-2 | 12.4 | 0.34 | 0.132 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.013 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.014 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.398 | 0.032 | 0.028 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.640 | 0.066 | 0.060 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.037 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.044 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.061 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.587 | 0.023 | 0.019 | | | GAM |
| Thorium 232 | TH-232 | 0.640 | 0.066 | 0.060 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.093 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.53 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.101 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

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## Sample: J1C1F0, Radionuclides

**EBERLINE SERVICES/RICHMOND**
**SAMPLE DELIVERY GROUP K2288**

7884-007 J1C1F0

**DATA SHEET**

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7884 | Client/Case no | Hanford | SDG K2288 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S009002-07 | Client sample id | J1C1F0 | | |
| Dept sample id | 7884-007 | Location/Matrix | 618-10-20 Trench Soil | SOLID | |
| Received | 09/01/10 | Collected/Weight | 08/26/10 08:25 | 1431 g | |
| % solids | 92.0 | Custody/SAF No | RC-154-030 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Tritium | 10028-17-8 | -0.160 | 2.2 | 3.82 | 10.0 | U | H |
| Carbon 14 | 14762-75-5 | 0.883 | 0.49 | 0.802 | 1.00 | | C |
| Technetium 99 | 14133-76-7 | 0.079 | 0.18 | 0.498 | 15.0 | U | TC |
| Uranium 233/234 | U-233/234 | 0.614 | 0.30 | 0.224 | 1.00 | | U |
| Uranium 235 | 15117-96-1 | 0.035 | 0.071 | 0.271 | 1.00 | U | U |
| Uranium 238 | U-238 | 0.556 | 0.24 | 0.224 | 1.00 | | U |
| Plutonium 238 | 13981-16-3 | 0.241 | 0.32 | 0.494 | 1.00 | U | PU |
| Plutonium 239/240 | PU-239/240 | -0.040 | 0.080 | 0.307 | 1.00 | U | PU |
| Potassium 40 | 13966-00-2 | 8.86 | 0.30 | 0.134 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.013 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | U | | 0.022 | 0.100 | U | GAM |
| Radium 226 | 13982-63-3 | 0.266 | 0.023 | 0.021 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.405 | 0.050 | 0.052 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.043 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.043 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.058 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.427 | 0.023 | 0.021 | | | GAM |
| Thorium 232 | TH-232 | 0.405 | 0.050 | 0.052 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.095 | | U | GAM |
| Uranium 238 | U-238 | U | | 1.58 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.102 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

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| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/27/10 |

# 618-10-20 Test Pit Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C1J6, GEA

Apex™

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Analysis Report for RCF25430

J1C1J6 SAF:RC-154 618-10-20 TRENCH SOIL GRID #1 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25430 |
| Sample Description | : J1C1J6 SAF:RC-154 618-10-20 TRENCH SOIL GRID #1 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.700E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 8:00:00AM |
| Acquisition Started | : 8/27/2010 7:57:24AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 6017 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.974 | 4.60E+00 | 6.24E-01 | |
| PB-212 | | 0.710 | 1.67E-01 | 2.57E-02 | |
| RA-226d | @ | 0.831 | 1.58E-01 | 2.41E-02 | |
| TH-232d | | 0.997 | 1.58E-01 | 2.07E-02 | |

## Sample: J1C1J7, GEA

Apex™

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Analysis Report for RCF25431

J1C1J7 SAF:RC-154 618-10-20 TRENCH SOIL GRID #2 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25431 |
| Sample Description | : J1C1J7 SAF:RC-154 618-10-20 TRENCH SOIL GRID #2 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.890E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 8:05:00AM |
| Acquisition Started | : 8/27/2010 7:57:29AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 6018 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.994 | 4.99E+00 | 6.54E-01 | |
| PB-212 | | 0.710 | 1.42E-01 | 2.68E-02 | |
| RA-226d | @ | 0.992 | 1.55E-01 | 2.51E-02 | |
| TH-232d | | 0.995 | 1.51E-01 | 2.12E-02 | |
| U-235 | | 0.542 | 3.11E-02 | 2.08E-02 | |

LMOA 8/30/10

## Sample: J1C1J8, GEA

Apex™

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Analysis Report for RCF25432

J1C1J8 SAF:RC-154 618-10-20 TRENCH SOIL GRID #3 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25432 |
| Sample Description | : J1C1J8 SAF:RC-154 618-10-20 TRENCH SOIL GRID #3 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.950E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 8:10:00AM |
| Acquisition Started | : 8/27/2010 9:10:14AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.9 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Description | : GEA2703 NONSTD 031010Effcal SN80398-238 |
| Sample Number | : 6015 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.984 | 4.59E+00 | 6.35E-01 | |
| RA-226d | @ | 0.351 | 1.34E-01 | 3.17E-02 | |
| TH-232d | | 0.507 | 1.90E-01 | 3.64E-02 | |
| AM-241 | | 0.997 | 3.65E-02 | 3.36E-02 | LMDA 8W 08301K |

## Sample: J1C1J9, GEA

Apex™

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Analysis Report for RCF25433

J1C1J9 SAF:RC-154 618-10-20 TRENCH SOIL GRID #4 250g aG JAR

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25433 |
| Sample Description | : J1C1J9 SAF:RC-154 618-10-20 TRENCH SOIL GRID #4 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.730E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 8:15:00AM |
| Acquisition Started | : 8/27/2010 9:10:19AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/15/2010 |
| Efficiency Calibration Description | : PGTWHITE NONSTD 031010 Effcal SN80400-238 |
| Sample Number | : 6016 |

QUALITATIVE ONLY

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.977 | 5.58E+00 | 6.90E-01 | |
| PB-212 | | 0.708 | 2.13E-01 | 2.99E-02 | |
| RA-226d | @ | 0.732 | 1.92E-01 | 2.78E-02 | |
| TH-232d | | 0.997 | 1.73E-01 | 2.22E-02 | |

## Sample: J1C1K0, GEA

Apex™

8/27/2010 10:07:59AM Page 1 of 4

Analysis Report for RCF25434

J1C1K0 SAF:RC-154 618-10-20 TRENCH SOIL GRID #5 250g aG JAR

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25434 |
| Sample Description | : J1C1K0 SAF:RC-154 618-10-20 TRENCH SOIL GRID #5 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.890E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 8:20:00AM |
| Acquisition Started | : 8/27/2010 9:07:47AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 6014 |

**QUALITATIVE ONLY**

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.992 | 5.12E+00 | 6.55E-01 | |
| PB-212 | | 0.709 | 1.62E-01 | 2.84E-02 | |
| RA-226d | @ | 0.614 | 1.38E-01 | 2.59E-02 | |
| TH-232d | | 0.990 | 1.73E-01 | 2.68E-02 | |
| AM-241 | | 0.998 | 5.32E-01 | 6.01E-02 | |

## Sample: J1C1K1, GEA

Apex™

8/27/2010 11:12:55AM Page 1 of 4

Analysis Report for RCF25435

J1C1K1 SAF:RC-154 618-10-20 TRENCH SOIL GRID #6 250g aG JAR

# GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25435 |
| Sample Description | : J1C1K1 SAF:RC-154 618-10-20 TRENCH SOIL GRID #6 250g aG JAR |
| Sample Type | : Non Standard Geometry |
| Sample Size | : 3.830E+02 grams |
| Facility | : Default |
| Sample Taken On | : 8/26/2010 8:25:00AM |
| Acquisition Started | : 8/27/2010 10:12:42AM |
| Procedure | : Non Standard Geometry |
| Operator | : RCT |
| Detector Name | : REGIE02 |
| Geometry | : Non Standard Geometry |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.3 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 7/29/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : REGE02 NSTD 032610Cal 80398-238 |
| Sample Number | : 6019 |

# INTERFERENCE CORRECTED REPORT

| Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|
| K-40 | | 0.982 | 5.42E+00 | 6.87E-01 | |
| PB-212 | | 0.710 | 2.04E-01 | 2.96E-02 | |
| RA-226d | @ | 0.829 | 1.71E-01 | 2.66E-02 | |
| TH-232d | | 0.853 | 1.82E-01 | 2.46E-02 | |
| U-238d | | 0.336 | 2.38E-01 | 2.05E-01 | |

# 618-10-20 Test Pit Chemical Analytical Results
# Sample: J1C1D5, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/20/2010 15:20 |

**J1C1D5**
**1009009-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.28 U | 5.28 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 10.6 U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 10.6 U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.6 U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **14.9** | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.28 U | 5.28 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 8.80 U | 8.80 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 8.80 U | 8.80 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 8.80 U | 8.80 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.28 U | 5.28 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 8.80 U | 8.80 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.40 U | 4.40 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *87 %* | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *96 %* | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *120 %* | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D6, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: KZ288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D6**
**1009009-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 6.12 U | 6.12 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 12.2 U | 12.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 12.2 U | 12.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.2 U | 12.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **16.1** | 12.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 6.12 U | 6.12 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 10.2 U | 10.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 10.2 U | 10.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 10.2 U | 10.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 6.12 U | 6.12 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 10.2 U | 10.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 5.10 U | 5.10 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *98 %* | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *102 %* | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *145 % S* | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D6, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D6**
**1009009-03RE1 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 6.77 U | 6.77 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 13.5 U | 13.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 13.5 U | 13.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 13.5 U | 13.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **31.4** | 13.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 6.77 U | 6.77 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 11.3 U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 11.3 U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 11.3 U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 6.77 U | 6.77 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 11.3 U | 11.3 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 5.64 U | 5.64 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *95 %* | *63-131* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *99 %* | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *145 %* * | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D7, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D7**
**1009009-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 6.31 U | 6.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.6 U | 12.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **19.0** | 12.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 6.31 U | 6.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 10.5 U | 10.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 6.31 U | 6.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 10.5 U | 10.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 5.26 U | 5.26 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *89 %* | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *97 %* | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *131 % ** | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D7, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D7**
**1009009-04RE1 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.74 U | 5.74 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 11.5 U | 11.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 11.5 U | 11.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 11.5 U | 11.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | 19.1 | 11.5 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.74 U | 5.74 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 9.56 U | 9.56 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 9.56 U | 9.56 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 9.56 U | 9.56 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.74 U | 5.74 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 9.56 U | 9.56 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.78 U | 4.78 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *102 %* | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *97 %* | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *134 % ** | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D8, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D8**

**1009009-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| 1,1,1-Trichloroethane | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 10.7 U | 10.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 10.7 U | 10.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 10.7 U | 10.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **16.3** | 10.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 5.35 U | 5.35 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 8.91 U | 8.91 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Caloroethane | 8.91 U | 8.91 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 8.91 U | 8.91 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 5.35 U | 5.35 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 8.91 U | 8.91 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 4.46 U | 4.46 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *92 %* | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *94 %* | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *118 %* | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D9, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1D9**
**1009009-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 6.62 | U | 6.62 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 13.2 | U | 13.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 13.2 | U | 13.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 13.2 | U | 13.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **11.2** | J | 13.2 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 6.62 | U | 6.62 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 6.62 | U | 6.62 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 11.0 | U | 11.0 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 5.52 | U | 5.52 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *84 %* | | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *95 %* | | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *118 %* | | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1F0, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/20/2010 15:20 |

**J1C1F0**
**1009009-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1,2-Trichloroethane | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethane | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,1-Dichloroethene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethane | 6.37 | U | 6.37 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloroethene (total) | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 1,2-Dichloropropane | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Butanone | 12.7 | U | 12.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 2-Hexanone | 12.7 | U | 12.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| 4-Methyl-2-pentanone | 12.7 | U | 12.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **Acetone** | **22.9** | | 12.7 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Benzene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromodichloromethane | 6.37 | U | 6.37 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromoform | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Bromomethane | 10.6 | U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Disulfide | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Carbon Tetrachloride | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chlorobenzene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroethane | 10.6 | U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloroform | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Chloromethane | 10.6 | U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,2-Dichloroethene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| cis-1,3-Dichloropropene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Dibromochloromethane | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Ethylbenzene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Methylene Chloride | 6.37 | U | 6.37 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Styrene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Tetrachloroethene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,2-Dichloroethene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Toluene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| trans-1,3-Dichloropropene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Trichloroethene | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Vinyl chloride | 10.6 | U | 10.6 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| Xylenes, total | 5.31 | U | 5.31 | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| **TIC:TIC:Methylene Chloride** | **6.81** | **J** | | ug/kg dry | 1 | L009066 | 09/06/2010 | 09/06/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *96 %* | | *63-151* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *94 %* | | *68-140* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *121 %* | | *66-122* | | | *L009066* | *09/06/2010* | *09/06/2010* | *8260B* |

## Sample: J1C1D5, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1D5**
**1009009-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,2-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,3-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,4-Dichlorobenzene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4,5-Trichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4,6-Trichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dichlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dimethylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dinitrotoluene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,6-Dinitrotoluene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Chloronaphthalene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Chlorophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Methylnaphthalene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Nitrophenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 697 U | 697 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chloro-3-methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chloroaniline | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3- and/or 4-Methylphenol | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Nitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Acenaphthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Acenaphthylene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Anthracene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benz[a]anthracene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[a] pyrene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[b] fluoranthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[g,h,i] perylene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[k] fluoranthene | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroethyl) ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 348 U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |

## Sample: J1C1D5, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1D5**
**1009009-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Carbazole | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Chrysene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dibenz[a,h]anthracene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dibenzofuran | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Diethyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dimethyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Di-n-butyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Di-n-octyl Phthalate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Fluoranthene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Fluorene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorobenzene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorobutadiene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorocyclopentadiene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachloroethane | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Isophorone | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Naphthalene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Nitrobenzene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| N-Nitrosodiphenylamine | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Pentachlorophenol | 1740 | U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Phenanthrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Phenol | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Pyrene | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Unknown 2** | **13200** | **B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Unknown 1** | **1130** | **B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 3** | **509** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 2** | **105000** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 1** | **825** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Tributylphosphate | 348 | U | 348 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *69 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *79 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *82 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *52 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *96 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |

## Sample: J1C1D6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1D6**
**1009009-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,2-Dichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,3-Dichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,4-Dichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4,5-Trichlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4,6-Trichlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dichlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dimethylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dinitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dinitrotoluene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,6-Dinitrotoluene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Chloronaphthalene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Chlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Methylnaphthalene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Nitrophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 700 U | 700 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chloro-3-methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chloroaniline | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3- and/or 4-Methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Nitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Acenaphthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Acenaphthylene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Anthracene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benz[a]anthracene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[a] pyrene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[b] fluoranthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[g,h,i] perylene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[k] fluoranthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroethyl) ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |

## Sample: J1C1D6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1D6**
**1009009-03 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Carbazole | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **Chrysene** | **94.2** | J | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dibenz[a,h]anthracene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dibenzofuran | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Diethyl Phthalate | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dimethyl Phthalate | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Di-n-butyl Phthalate | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Di-n-octyl Phthalate | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Fluoranthene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Fluorene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorobenzene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorobutadiene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorocyclopentadiene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachloroethane | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Isophorone | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Naphthalene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Nitrobenzene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| N-Nitrosodiphenylamine | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Pentachlorophenol | 1750 | U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Phenanthrene | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Phenol | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **Pyrene** | **59.1** | J | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 3** | **235** | J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 1** | **163** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 2** | **1290** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 2** | **111000** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 1** | **724** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Tributylphosphate | 350 | U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *67 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *73 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *77 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *47 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *103 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |

## Sample: J1C1D7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1D7**
**1009009-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 1,2-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 1,3-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 1,4-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4,5-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4,6-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dimethylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,6-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Chloronaphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Chlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Methylnaphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Nitrophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 694 U | 694 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 3-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Chloro-3-methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Chloroaniline | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 3- and/or 4-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Nitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Acenaphthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Acenaphthylene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benz[a]anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[a] pyrene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[b] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[g,h,i] perylene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[k] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-chloroethyl) ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |

## Sample: J1C1D7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1D7**
**1009009-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Carbazole | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Chrysene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Dibenz[a,h]anthracene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Dibenzofuran | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Diethyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Dimethyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Di-n-butyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Di-n-octyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Fluoranthene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Fluorene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachlorobenzene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachlorobutadiene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachlorocyclopentadiene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachloroethane | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Isophorone | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Naphthalene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Nitrobenzene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| N-Nitrosodiphenylamine | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Pentachlorophenol | 1740 | U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Phenanthrene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Phenol | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Pyrene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Unknown 2** | **1090** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Unknown 1** | **965** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Aldol 3** | **339** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Aldol 2** | **83700** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Aldol 1** | **561** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Tributylphosphate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *48 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *54 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *57 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *61 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *30 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *76 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |

## Sample: J1C1D8, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1D8**
**1009009-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 1,2-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 1,3-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 1,4-Dichlorobenzene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4,5-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4,6-Trichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dichlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dimethylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dinitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,4-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2,6-Dinitrotoluene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Chloronaphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Chlorophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Methylnaphthalene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 2-Nitrophenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 694 U | 694 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 3-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Chloro-3-methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Chloroaniline | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 3- and/or 4-Methylphenol | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Nitroaniline | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| 4-Nitrophenol | 1740 U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Acenaphthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Acenaphthylene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benz[a]anthracene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[a] pyrene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[b] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[g,h,i] perylene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Benzo[k] fluoranthene | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-chloroethyl) ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 347 U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |

## Sample: J1C1D8, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1D8**
**1009009-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Carbazole | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Chrysene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Dibenz[a,h]anthracene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Dibenzofuran | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Diethyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Dimethyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Di-n-butyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Di-n-octyl Phthalate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Fluoranthene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Fluorene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachlorobenzene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachlorobutadiene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachlorocyclopentadiene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Hexachloroethane | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Isophorone | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Naphthalene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Nitrobenzene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| N-Nitrosodiphenylamine | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Pentachlorophenol | 1740 | U | 1740 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Phenanthrene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Phenol | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Pyrene | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Unknown 2** | **949** | **B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Aldol 3** | **341** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Aldol 2** | **93700** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Aldol 1** | **664** | **A, B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| **TIC:Unknown 1** | **1250** | **B, J** | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| Tributylphosphate | 347 | U | 347 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/10/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *62 %* | | *25-171* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *69 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *73 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *79 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *47 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *106 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/10/2010* | *8270C* |

## Sample: J1C1D9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WCHanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Josn Kessner | 09/17/2010 09:29 |

**J1C1D9**
**1009009-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,2-Dichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,3-Dichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 1,4-Dichlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4,5-Trichlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4,6-Trichlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dichlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dimethylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dinitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,4-Dinitrotoluene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2,6-Dinitrotoluene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Chloronaphthalene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Chlorophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Methylnaphthalene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 2-Nitrophenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 699 U | 699 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chloro-3-methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chloroaniline | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 3- and/or 4-Methylphenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Nitroaniline | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| 4-Nitrophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Acenaphthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Acenaphthylene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Anthracene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benz[a]anthracene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[a] pyrene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[b] fluoranthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[g,h,i] perylene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Benzo[k] fluoranthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroethyl) ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |

## Sample: J1C1D9, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 09:29 |

**J1C1D9**
**1009009-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Carbazole | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Chrysene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dibenz[a,h]anthracene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dibenzofuran | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Diethyl Phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Dimethyl Phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Di-n-butyl Phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Di-n-octyl Phthalate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Fluoranthene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Fluorene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorobutadiene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachlorocyclopentadiene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Hexachloroethane | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Isophorone | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Naphthalene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Nitrobenzene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| N-Nitrosodiphenylamine | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Pentachlorophenol | 1750 U | 1750 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Phenanthrene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Phenol | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Pyrene | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Unknown 2** | **1490** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Unknown 1** | **1170** B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 3** | **333** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 2** | **81700** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| **TIC:Aldol 1** | **545** A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| Tributylphosphate | 350 U | 350 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/08/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *67 %* | *25-121* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *68 %* | *24-113* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *74 %* | *23-120* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *76 %* | *30-115* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *48 %* | *19-122* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *103 %* | *18-137* | | | *L009037* | *09/03/2010* | *09/08/2010* | *8270C* |

## Sample: J1C1F0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1F0**

**1009009-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,2-Dichlorobenzene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,3-Dichlorobenzene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 1,4-Dichlorobenzene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4,5-Trichlorophenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4,6-Trichlorophenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dichlorophenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dimethylphenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dinitrophenol | 1790 U | 1790 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,4-Dinitrotoluene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2,6-Dinitrotoluene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Chloronaphthalene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Chlorophenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Methylnaphthalene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Methylphenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Nitroaniline | 1790 U | 1790 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 2-Nitrophenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 715 U | 715 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3-Nitroaniline | 1790 U | 1790 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chloro-3-methylphenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chloroaniline | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 3- and/or 4-Methylphenol | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Nitroaniline | 1790 U | 1790 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| 4-Nitrophenol | 1790 U | 1790 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Acenaphthene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Acenaphthylene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Anthracene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benz[a]anthracene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[a] pyrene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[b] fluoranthene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[g,h,i] perylene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Benzo[k] fluoranthene | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroethyl) ether | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 358 U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |

## Sample: J1C1F0, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 09:29 |

**J1C1F0**
**1009009-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Carbazole | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Chrysene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dibenz[a,h]anthracene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dibenzofuran | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Diethyl Phthalate | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Dimethyl Phthalate | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Di-n-butyl Phthalate | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Di-n-octyl Phthalate | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Fluoranthene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Fluorene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorobenzene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorobutadiene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachlorocyclopentadiene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Hexachloroethane | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Isophorone | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Naphthalene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Nitrobenzene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| N-Nitrosodiphenylamine | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Pentachlorophenol | 1790 | U | 1790 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Phenanthrene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Phenol | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Pyrene | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 2** | **541** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Unknown 1** | **1580** | B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 3** | **173** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 2** | **109000** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| **TIC:Aldol 1** | **753** | A, B, J | | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| Tributylphosphate | 358 | U | 358 | ug/kg dry | 1 | L009037 | 09/03/2010 | 09/11/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *66 %* | | *25-121* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *74 %* | | *24-113* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *79 %* | | *23-120* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *81 %* | | *30-115* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *66 %* | | *19-122* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *89 %* | | *18-137* | | | *L009037* | *09/03/2010* | *09/11/2010* | *8270C* |

## Sample: J1C1D5 – J1C1D7, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 19:59 |

### J1C1D5
**1009009-02 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *119 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *138 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

### J1C1D6
**1009009-03 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.7 U | 13.7 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *81 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *109 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

### J1C1D7
**1009009-04 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| **Aroclor 1254** | **38.9** | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| **Aroclor 1260** | **8.56 J** | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *124 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *155 % ** | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

## Sample: J1C1D8 – J1C1F0, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/13/2010 19:59 |

### J1C1D8
**1009009-05 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.9 U | 13.9 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *107 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *130 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

### J1C1D9
**1009009-06 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 13.0 U | 13.0 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *124 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *135 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

### J1C1F0
**1009009-07 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1221 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1232 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1242 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1248 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1254 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| Aroclor 1260 | 14.3 U | 14.3 | ug/kg dry | 1 | L009049 | 09/06/2010 | 09/10/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *98 %* | *43-144* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *110 %* | *52-141* | | | *L009049* | *09/06/2010* | *09/10/2010* | *8082* |

## Sample: J1C1D5, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D5**
**1009009-02 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4360** | | 3.88 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.466 | U | 0.466 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.64** | | 0.776 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **52.3** | | 0.388 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.207** | | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.606** | B | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.139** | B | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **5560** | | 77.6 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **4.73** | | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **7.10** | | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **11.7** | | 0.776 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **24700** | | 15.5 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **2.60** | | 0.388 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **4120** | | 58.2 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **307** | | 3.88 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.426** | B | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **8.64** | | 3.10 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **619** | | 310 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.233 | U | 0.233 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **302** | | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Silver | 0.155 | U | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **223** | | 38.8 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **74.4** | | 1.94 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **45.9** | | 7.76 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **25.1** | | 3.88 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0250 | U | 0.0250 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1D5, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 11:12 |

**J1C1D5**
**1009009-02 (Soil)**

**Lionville Laboratory**

**TCLP Metals by SW846 1311 6000/7000 series**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.278** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1D6, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 11:12 |

**J1C1D6**
**1009009-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4890** | | 4.34 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.521 | U | 0.521 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.23** | | 0.869 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **59.7** | | 0.434 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.221** | | 0.174 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.737** | B | 1.74 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.187** | | 0.174 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **5260** | | 86.9 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **5.36** | | 0.174 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **6.86** | | 1.74 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **12.1** | | 0.869 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **24700** | | 17.4 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **3.49** | | 0.434 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **4210** | | 65.2 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **304** | | 4.34 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.374** | B | 1.74 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Nickel | **9.24** | | 3.48 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **695** | | 348 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Selenium** | **0.313** | | 0.261 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **347** | | 1.74 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Silver | 0.174 | U | 0.174 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **232** | | 43.4 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **71.1** | | 2.17 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **63.4** | | 8.69 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **24.2** | | 4.34 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0265 | U | 0.0265 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1D6, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D6**
**1009009-03 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.267** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1D7, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D7**
**1009009-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **4760** | | 3.70 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.445 | U | 0.445 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.21** | | 0.741 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **56.8** | | 0.370 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.213** | | 0.148 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.734** | B | 1.48 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.168** | | 0.148 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **5110** | | 74.1 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **4.82** | | 0.148 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **6.82** | | 1.48 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **13.3** | | 0.741 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **24100** | | 14.8 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **2.75** | | 0.370 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **3830** | | 55.6 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **296** | | 3.70 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.404** | B | 1.48 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **6.62** | | 2.96 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **695** | | 296 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.222 | U | 0.222 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **270** | | 1.48 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Silver | 0.148 | U | 0.148 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **219** | | 37.0 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **69.9** | | 1.85 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **62.2** | | 7.41 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **24.0** | | 3.70 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0256 | U | 0.0256 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1D7, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D7**
**1009009-04 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.275** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Mercury** | **0.0000750** | **B** | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1D8, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D8**
**1009009-05 (Soil)**

**Lionville Laboratory**

**Metals by SW846 6000/7000 series**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Aluminum** | **5450** | | 3.87 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.464 | U | 0.464 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.20** | | 0.773 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **67.4** | | 0.387 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.227** | | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.747** | B | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.141** | B | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **4290** | | 77.3 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **6.40** | | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **6.22** | | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **10.4** | | 0.773 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **22200** | | 15.5 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **3.01** | | 0.387 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **3650** | | 58.0 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **333** | | 3.87 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.337** | B | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **6.79** | | 3.09 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **884** | | 309 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.232 | U | 0.232 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **365** | | 1.55 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Silver | 0.155 | U | 0.155 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **188** | | 38.7 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **66.2** | | 1.93 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **43.4** | | 7.73 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **23.6** | | 3.87 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0256 | U | 0.0256 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1D8, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D8**
**1009009-05 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.268** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1D9, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 11:12 |

**J1C1D9**
**1009009-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5540** | | 4.14 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.496 | U | 0.496 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.46** | | 0.827 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **64.3** | | 0.414 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.248** | | 0.165 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.824** | B | 1.65 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.145** | B | 0.165 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **4310** | | 82.7 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **6.04** | | 0.165 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **6.87** | | 1.65 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **11.1** | | 0.827 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **23300** | | 16.5 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **3.23** | | 0.414 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **3750** | | 62.1 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **322** | | 4.14 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.440** | B | 1.65 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **7.85** | | 3.31 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **1020** | | 331 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.248 | U | 0.248 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **368** | | 1.65 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/13/2010 | 6010B |
| Silver | 0.165 | U | 0.165 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **175** | | 41.4 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **67.0** | | 2.07 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **45.9** | | 8.27 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **25.5** | | 4.14 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0258 | U | 0.0258 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1D9, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1D9**
**1009009-06 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.281** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1F0, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F0**
**1009009-07 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **5830** | | 4.10 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Antimony | 0.492 | U | 0.492 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Arsenic** | **2.26** | | 0.821 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Barium** | **63.9** | | 0.410 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Beryllium** | **0.246** | | 0.164 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Boron** | **0.892** | B | 1.64 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cadmium** | **0.153** | B | 0.164 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Calcium** | **4010** | | 82.1 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Chromium** | **8.53** | | 0.164 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Cobalt** | **6.60** | | 1.64 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Copper** | **10.5** | | 0.821 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Iron** | **23500** | | 16.4 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Lead** | **3.02** | | 0.410 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Magnesium** | **3640** | | 61.6 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Manganese** | **325** | | 4.10 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Molybdenum** | **0.394** | B | 1.64 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Nickel** | **7.44** | | 3.28 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Potassium** | **1050** | | 328 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Selenium | 0.246 | U | 0.246 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Silicon** | **381** | | 1.64 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/13/2010 | 6010B |
| Silver | 0.164 | U | 0.164 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Sodium** | **208** | | 41.0 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Vanadium** | **70.4** | | 2.05 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zinc** | **46.6** | | 8.21 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| **Zirconium** | **26.3** | | 4.10 | mg/kg dry | 1 | L009089 | 09/09/2010 | 09/10/2010 | 6010B |
| Mercury | 0.0257 | U | 0.0257 | mg/kg dry | 1 | L009146 | 09/14/2010 | 09/15/2010 | 7471A |

## Sample: J1C1F0, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/16/2010 11:12 |

**J1C1F0**
**1009009-07 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| **Barium** | **0.272** | | 0.00600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009165 | 09/14/2010 | 09/15/2010 | 6010 |
| Mercury | 0.000200 | U | 0.000200 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C1D5 - J1C1D6, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/17/2010 15:57 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1D5 (1009009-02) Soil** | | | | | | | | | |
| **%Solids** | **94.7** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **12.8** | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.7** B | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 U | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 U | 1.9 | 9.3 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.4** B | 0.9 | 4.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.50** | 0.09 | 0.46 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| Hexavalent Chromium | 0.05 U | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 U | 0.51 | 1.01 | mg/kg dry | 1 | L009117 | 09/05/2010 | 09/05/2010 | SW846 9014 |
| Sulfide, total | 42.2 U | 42.2 | 106 | mg/kg dry | 1 | L009141 | 09/05/2010 | 09/05/2010 | SW846 9034 |
| **pH** | **8.11** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1D6 (1009009-03) Soil** | | | | | | | | | |
| **%Solids** | **94.3** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **3.3** B | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrate | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.0 U | 2.0 | 9.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.4** B | 1.0 | 5.0 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.20** B | 0.10 | 0.50 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.18** B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.52 U | 0.52 | 1.04 | mg/kg dry | 1 | L009117 | 09/05/2010 | 09/05/2010 | SW846 9014 |
| Sulfide, total | 42.4 U | 42.4 | 106 | mg/kg dry | 1 | L009141 | 09/05/2010 | 09/05/2010 | SW846 9034 |
| **pH** | **8.25** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1D7 - J1C1D8, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 15:57 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1D7 (1009009-04) Soil** | | | | | | | | | |
| **%Solids** | **95.0** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Chloride** | **1.3 B** | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrate | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 0.9 U | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 U | 1.9 | 9.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.0 B** | 0.9 | 4.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.37 B** | 0.09 | 0.47 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.11 B** | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.52 U | 0.52 | 1.05 | mg/kg dry | 1 | L009117 | 09/05/2010 | 09/05/2010 | SW846 9014 |
| Sulfide, total | 42.1 U | 42.1 | 105 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **8.33** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1D8 (1009009-05) Soil** | | | | | | | | | |
| **%Solids** | **95.1** | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 1.0 U | 1.0 | 5.2 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Chloride | 1.0 U | 1.0 | 5.2 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Fluoride** | **1.1 B** | 1.0 | 5.2 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **1.6 B** | 1.0 | 5.2 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 U | 1.0 | 5.2 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 2.1 U | 2.1 | 10.4 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.3 B** | 1.0 | 5.2 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.61** | 0.10 | 0.52 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.20 B** | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.51 U | 0.51 | 1.03 | mg/kg dry | 1 | L009117 | 09/05/2010 | 09/05/2010 | SW846 9014 |
| Sulfide, total | 42.1 U | 42.1 | 105 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **8.25** | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1D9 - J1C0C0, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2288 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/17/2010 15:57 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **J1C1D9 (1009009-06) Soil** | | | | | | | | | | |
| **%Solids** | **94.4** | | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Chloride | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **2.2** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Orthophosphate | 1.9 | U | 1.9 | 9.6 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.4** | B | 1.0 | 4.8 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.74** | | 0.10 | 0.48 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.16** | B | 0.05 | 0.21 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.53 | U | 0.53 | 1.05 | mg/kg dry | 1 | L009117 | 09/05/2010 | 09/05/2010 | SW846 9014 |
| Sulfide, total | 42.4 | U | 42.4 | 106 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **8.17** | | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |
| **J1C1F0 (1009009-07) Soil** | | | | | | | | | | |
| **%Solids** | **92.3** | | 0.1 | 0.1 | % by Weight | 1 | L009030 | 09/02/2010 | 09/02/2010 | EPA 160.6 |
| Bromide | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Chloride | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Fluoride | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate** | **3.4** | B | 1.0 | 4.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| Nitrite | 1.0 | U | 1.0 | 4.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Orthophosphate** | **3.5** | B | 1.9 | 9.7 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Sulfate** | **2.5** | B | 1.0 | 4.9 | mg/kg dry | 1 | L009224 | 09/16/2010 | 09/16/2010 | EPA 300.0 (1993) |
| **Nitrate/Nitrite as N** | **0.98** | | 0.10 | 0.49 | mg/kg dry | 1 | L009223 | 09/16/2010 | 09/17/2010 | EPA 353.2 |
| **Hexavalent Chromium** | **0.09** | B | 0.05 | 0.22 | mg/kg dry | 1 | L009064 | 09/07/2010 | 09/08/2010 | SW846 7196A |
| Cyanide (total) | 0.53 | U | 0.53 | 1.05 | mg/kg dry | 1 | L009118 | 09/07/2010 | 09/07/2010 | SW846 9014 |
| Sulfide, total | 43.3 | U | 43.3 | 108 | mg/kg dry | 1 | L009143 | 09/07/2010 | 09/07/2010 | SW846 9034 |
| **pH** | **8.06** | | 0.10 | 0.10 | pH Units | 1 | L009082 | 09/08/2010 | 09/08/2010 | SW846 9045D |

## Sample: J1C1D5 – J1C1D7, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2288<br>Project Manager: Joan Kessner | Reported:<br>09/15/2010 15:16 |

### Extractable Petroleum Hydrocarbons by SW846 8015
### Lionville Laboratory

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **J1C1D5 (1009009-02) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *120 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3490 U | 3490 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 163000 | 10500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10500 U | 10500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1D6 (1009009-03) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *106 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 19700 U | 19700 | ug/kg dry | 5 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 969000 D | 59100 | ug/kg dry | 5 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 59100 U | 59100 | ug/kg dry | 5 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1D7 (1009009-04) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *93 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 17000 U | 17000 | ug/kg dry | 5 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 348000 D | 51000 | ug/kg dry | 5 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 51000 U | 51000 | ug/kg dry | 5 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1D8 (1009009-05) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *88 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3470 U | 3470 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 85700 | 10400 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10400 U | 10400 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1D9 (1009009-06) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *86 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3510 U | 3510 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 79600 | 10500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10500 U | 10500 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **J1C1F0 (1009009-07) Soil** | | | | | | | | |
| *Surrogate: p-Terphenyl* | *81 %* | *39-129* | | | *L009054* | *09/07/2010* | *09/10/2010* | *8015M* |
| Diesel Range Organics | 3400 U | 3400 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| **Motor Oil** | 176000 | 10200 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |
| Kerosene | 10200 U | 10200 | ug/kg dry | 1 | L009054 | 09/07/2010 | 09/10/2010 | 8015M |

# 618-10-20 Test Pit Asbestos
# Sample: J1C1J6 - J1C1K1, Radionuclides

TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 245383_2 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01116 |
| Date: | 9/8/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L6D6G1AA** | **L6D6N1AA** | **L6D6T1AA** | **L6D641AA** | **L6D7A1AA** |
| **Client ID** | J1C1J6' | J1C1J7' | J1C1J8' | J1C1J9' | J1C1K0' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | ND | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | ND | ND | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

4 TESTAMERICA RICHLAND

**TA Richland**
**Asbestos PLM**

| | | | | | |
|---|---|---|---|---|---|
| Analyst: | D. Petty | SOP Information | Method | Batch # | 245383 |
| Analyst Signature: | | RL-ASB-002 | NIOSH 9002 | SDG # | MA01116 |
| Date: | 9/8/10 | Revision 2 | | | |
| **Analysis Information** | | | | | |
| **Sample ID** | **L6D421AA** | **L6D5C1AA** | **L6D5J1AA** | **L6D5M1AA** | **L6D531AA** |
| **Client ID** | J1C1K1' | J1C1K2' | J1C1K3' | J1C1K4' | J1C1J5' |
| **Macroscopic examination** | | | | | |
| Sample Description | soil | soil | soil | soil | soil |
| Homogeneous | Y | Y | Y | Y | Y |
| Color | dark brown | dark brown | dark brown | dark brown | dark brown |
| % Visible Fibers | 0 | 0 | 0 | 0 | 0 |
| **PLM Analysis** | | | | | |
| **Asbestiform Minerals** | | | | | |
| % Chrysotyle | ND | ND | ND | ND | ND |
| %Amosite | ND | ND | ND | ND | ND |
| %Crocidolite | ND | ND | ND | ND | ND |
| %Tremolite | ND | ND | ND | ND | ND |
| %Actinolite | ND | ND | ND | ND | ND |
| % Anthophylite | ND | ND | ND | ND | ND |
| **% Total Asbestos** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Other Materials** | | | | | |
| % Cellulose | ND | ND | TRA | ND | ND |
| % Glass Fibers | ND | ND | ND | ND | ND |
| % Other fibers | ND | ND | TRA | TRA | ND |
| % Non-fibrous | 100 | 100 | 100 | 100 | 100 |

***Comments:***

**Note:** "ND" stands for "None Detected". "TRA" stands for "<1%"

3

# LABORATORY DATA RESULTS

## SAMPLE OF SOIL NEAR URANIUM DRUM IC-001 (J1C0X6)

## Radionuclide Results
## Sample: J1C0X6, Radionuclides

**E B E R L I N E  A N A L Y T I C A L / R I C H M O N D**
**SAMPLE DELIVERY GROUP K2206**

7094-001 J1C0X6

**D A T A  S H E E T**

| | | | | | |
|---|---|---|---|---|---|
| SDG | 7094 | Client/Case no | Hanford | SDG K2206 | |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 | | |
| Lab sample id | S008176-01 | Client sample id | J1C0X6 | | |
| Dept sample id | 7094-001 | Location/Matrix | 618-10-1 Leaking Drum | SOLID | |
| Received | 08/20/10 | Collected/Weight | 08/17/10 11:18 | 1337 g | |
| % solids | 93.2 | Custody/SAF No | RC-154-023 | RC-154 | |

| ANALYTE | CAS NO | RESULT pCi/g | 2σ ERR (COUNT) | MDA pCi/g | RDL pCi/g | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 28.2 | 6.4 | 2.98 | 10.0 | | 93A |
| Gross Beta | 12587-47-2 | 42.5 | 5.3 | 5.09 | 15.0 | | 93B |
| Potassium 40 | 13966-00-2 | 12.2 | 0.51 | 0.198 | | | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.023 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.081 | 0.022 | 0.025 | 0.100 | | GAM |
| Radium 226 | 13982-63-3 | 0.348 | 0.047 | 0.049 | 0.100 | | GAM |
| Radium 228 | 15262-20-1 | 0.616 | 0.10 | 0.107 | 0.200 | | GAM |
| Europium 152 | 14683-23-9 | U | | 0.058 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.082 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.092 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | 0.548 | 0.030 | 0.029 | | | GAM |
| Thorium 232 | TH-232 | 0.616 | 0.10 | 0.107 | | | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.634 | | U | GAM |
| Uranium 238 | U-238 | U | | 35.2 | | U | GAM |
| Americium 241 | 14596-10-2 | U | | 0.183 | | U | GAM |

618-10 & 618-11 Field Remediation - Soil In-Process

**DATA SHEETS**
Page 1
**SUMMARY DATA SECTION**
Page 10

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/15/10 |

# Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C0X6, GEA

Apex™

8/18/2010 12:25:55PM Page 1 of 4

Analysis Report for RCF25294

J1C0X6 SAF-RC-154 FF2/618-10-1 Leaking Drum in B -12 #618-1067

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25294 |
| Sample Description | : J1C0X6 SAF-RC-154 FF2/618-10-1 Leaking Drum in B -12 #618-1067 |
| Sample Type | : 50g pillbox |
| Sample Size | : 4.600E+01 grams |
| Facility | : Default |
| Sample Taken On | : 8/17/2010 11:18:00AM |
| Acquisition Started | : 8/18/2010 11:25:41AM |
| Procedure | : 50 Gram Pill Box |
| Operator | : RCT |
| Detector Name | : PGTWHITE |
| Geometry | : 50 ml Pill Box |
| Live Time | : 3600.0 seconds |
| Real Time | : 3600.5 seconds |
| Dead Time | : 0.01 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 3/10/2010 |
| Efficiency Calibration Used Done On | : 3/12/2010 |
| Efficiency Calibration Description | : PGTWHITE 50ml PB 031210 EffCal SN80398-238 |
| Sample Number | : 5529 |

#618A-10-0067
for COC form
[illegible] 8-18-10

## INTERFERENCE CORRECTED REPORT

| | Nuclide Name | | Nuclide Id Confidence | Wt mean Activity (pCi/grams) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|---|---|
| | K-40 | | 0.985 | 1.25E+01 | 3.05E+00 | |
| | PB-212 | | 0.711 | 1.05E+00 | 1.87E-01 | |
| | RA-226d | @ | 0.673 | 7.66E-01 | 1.86E-01 | |
| | TH-232d | | 0.429 | 4.14E-01 | 1.78E-01 | |
| X | U-235 | | 0.549 | | | |

# Chemical Analytical Results
# Sample: J1C0X6, TCLP VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2206 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 08/31/2010 11:34 |

**J1C0X6**
**1008148-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **TCLP Volatiles by SW846 1311/8260B** | | | | | | | | |
| Vinyl chloride | 0.05 U | 0.05 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| 1,1-Dichloroethene | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| 2-Butanone | 0.05 U | 0.05 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| Chloroform | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| Carbon Tetrachloride | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| Benzene | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| 1,2-Dichloroethane | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| Trichloroethene | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| Tetrachloroethene | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| Chlorobenzene | 0.02 U | 0.02 | mg/L | 5 | L008321 | 08/26/2010 | 08/26/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *85 %* | *64-140* | | | *L008321* | *08/26/2010* | *08/26/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *79 %* | *70-130* | | | *L008321* | *08/26/2010* | *08/26/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *85 %* | *81-115* | | | *L008321* | *08/26/2010* | *08/26/2010* | *8260B* |

## Sample: J1C0X6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2206 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/08/2010 15:21 |

**J1C0X6**
**1008148-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| 1,2,4-Trichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,2-Dichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,3-Dichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 1,4-Dichlorobenzene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,5-Trichlorophenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4,6-Trichlorophenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dichlorophenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dimethylphenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrophenol | 1760 U | 1760 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,4-Dinitrotoluene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2,6-Dinitrotoluene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chloronaphthalene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Chlorophenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylnaphthalene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Methylphenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitroaniline | 1760 U | 1760 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 2-Nitrophenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 703 U | 703 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3-Nitroaniline | 1760 U | 1760 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloro-3-methylphenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chloroaniline | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 3- and/or 4-Methylphenol | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitroaniline | 1760 U | 1760 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| 4-Nitrophenol | 1760 U | 1760 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Acenaphthylene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Anthracene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benz[a]anthracene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[a] pyrene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[b] fluoranthene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[g,h,i] perylene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Benzo[k] fluoranthene | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroethyl) ether | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 352 U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |

## Sample: J1C0X6, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2206 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/08/2010 15:21 |

**J1C0X6**
**1008148-01 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| Butyl Benzyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Carbazole | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Chrysene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenz[a,h]anthracene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dibenzofuran | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Diethyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Dimethyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-butyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Di-n-octyl Phthalate | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluoranthene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Fluorene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobenzene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorobutadiene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachlorocyclopentadiene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Hexachloroethane | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Isophorone | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Naphthalene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Nitrobenzene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| N-Nitrosodiphenylamine | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pentachlorophenol | 1760 | U | 1760 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenanthrene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Phenol | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| Pyrene | 352 | U | 352 | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Aldol 1** | **42600** | A, B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 1** | **1220** | B, J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 2** | **5940** | J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| **TIC:Unknown 3** | **282** | J | | ug/kg dry | 1 | L008253 | 08/24/2010 | 09/03/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *60 %* | | *25-121* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *59 %* | | *24-113* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *56 %* | | *23-120* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *66 %* | | *30-115* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *72 %* | | *19-122* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *69 %* | | *18-137* | | | *L008253* | *08/24/2010* | *09/03/2010* | *8270C* |

## Sample: J1C0X6, TCLP SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2206 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/03/2010 12:32 |

**J1C0X6**
**1008148-01 (Soil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **TCLP Semivolatiles by SW846 1311/8270C** | | | | | | | | |
| 1,4-Dichlorobenzene | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| 2,4,5-Trichlorophenol | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| 2,4,6-Trichlorophenol | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| 2,4-Dinitrotoluene | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| 2-Methylphenol | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| 3- and/or 4-Methylphenol | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| Hexachlorobenzene | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| Hexachlorobutadiene | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| Hexachloroethane | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| Nitrobenzene | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| Pentachlorophenol | 0.125 U | 0.125 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| Pyridine | 0.0500 U | 0.0500 | mg/L | 1 | L008322 | 08/30/2010 | 09/02/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *56 %* | *21-100* | | | *L008322* | *08/30/2010* | *09/02/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *43 %* | *10-94* | | | *L008322* | *08/30/2010* | *09/02/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *57 %* | *35-114* | | | *L008322* | *08/30/2010* | *09/02/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *51 %* | *43-116* | | | *L008322* | *08/30/2010* | *09/02/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *66 %* | *10-123* | | | *L008322* | *08/30/2010* | *09/02/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *77 %* | *33-141* | | | *L008322* | *08/30/2010* | *09/02/2010* | *8270C* |

## Sample: J1C0X6, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2206 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/02/2010 20:32 |

**J1C0X6**
**1008148-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | | |
| Aroclor 1016 | 140 | U | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| Aroclor 1221 | 140 | U | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| Aroclor 1232 | 140 | U | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| Aroclor 1242 | 140 | U | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| Aroclor 1248 | 140 | U | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| **Aroclor 1254** | **1710** | D | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| **Aroclor 1260** | **81.4** | J, D | 140 | ug/kg dry | 10 | L008288 | 08/26/2010 | 08/27/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *124 %* | | *43-144* | | | *L008288* | *08/26/2010* | *08/27/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *120 %* | | *52-141* | | | *L008288* | *08/26/2010* | *08/27/2010* | *8082* |

## Sample: J1C0X6, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2206<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 13:44 |

**J1C0X6**
**1008148-01 (Soil)**

**Lionville Laboratory**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **6160** | | 5.14 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| Antimony | 0.616 | U | 0.616 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Arsenic** | **2.80** | | 1.03 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Barium** | **58.8** | | 0.514 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Beryllium** | **0.378** | | 0.205 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Boron** | **0.839** | B | 2.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Cadmium** | **0.0960** | B | 0.205 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Calcium** | **5710** | | 103 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Chromium** | **5.74** | | 0.205 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Cobalt** | **6.55** | | 2.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Copper** | **11.2** | | 1.03 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Iron** | **24700** | | 20.5 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Lead** | **6.35** | | 0.514 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Magnesium** | **4280** | | 77.0 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Manganese** | **320** | | 5.14 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Molybdenum** | **0.454** | B | 2.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Nickel** | **7.88** | | 4.11 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Potassium** | **842** | | 411 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| Selenium | 0.308 | U | 0.308 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Silicon** | **1580** | | 2.05 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| Silver | 0.205 | U | 0.205 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Sodium** | **430** | | 51.4 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Vanadium** | **72.0** | | 2.57 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Zinc** | **44.9** | | 10.3 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| **Zirconium** | **25.2** | | 5.14 | mg/kg dry | 1 | L008238 | 08/23/2010 | 09/03/2010 | 6010B |
| Mercury | 0.0283 | U | 0.0283 | mg/kg dry | 1 | L008286 | 08/26/2010 | 08/27/2010 | 7471A |

## Sample: J1C0X6, TCLP Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2206<br>Project Manager: Joan Kessner | Reported:<br>09/16/2010 13:44 |

**J1C0X6**
**1008148-01 (Soil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | | |
| **TCLP Metals by SW846 1311 6000/7000 series** | | | | | | | | | |
| Arsenic | 0.0900 | U | 0.0900 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| **Barium** | **0.357** | | 0.00600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Cadmium | 0.0180 | U | 0.0180 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Chromium | 0.0300 | U | 0.0300 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Lead | 0.0600 | U | 0.0600 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Selenium | 0.120 | U | 0.120 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Silver | 0.0360 | U | 0.0360 | mg/L | 6 | L009061 | 09/07/2010 | 09/09/2010 | 6010 |
| Mercury | 0.000990 | U | 0.000990 | mg/L | 1 | L009169 | 09/14/2010 | 09/16/2010 | 7470 |

## Sample: J1C0X6, Wet Chemistry

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-154<br>Project Number: K2206<br>Project Manager: Joan Kessner | Reported:<br>09/14/2010 18:39 |

### Wet Chemistry
### Lionville Laboratory

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C0X6 (1008148-01) Soil** | | | | | | | | | |
| Ignitability | 40 F-01 | 40 | 40 | °F | 1 | L009170 | 09/14/2010 | 09/14/2010 | Pensky-Marten Closed Cup |
| **%Solids** | **93.6** | 0.1 | 0.1 | % by Weight | 1 | L009018 | 09/01/2010 | 09/01/2010 | EPA 160.6 |
| Bromide | 0.2 U | 0.2 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Chloride** | **82.7** | 2.4 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Fluoride** | **0.5** B | 0.3 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Nitrate** | **3.9** | 0.8 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Nitrite | 0.2 U | 0.2 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| Orthophosphate | 0.8 U | 0.8 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |
| **Sulfate** | **4.0** | 0.5 | 2.5 | mg/kg dry | 1 | L009092 | 09/02/2010 | 09/02/2010 | EPA 300.0 (1993) |

# Laboratory Notes and Definitions

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-154 | |
| 2620 Fermi Avenue | Project Number: K2206 | **Reported:** |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/14/2010 18:39 |

## Notes and Definitions

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| J | Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). |
| F-01 | Sample did not ignite; sample was heated to approximately 210°F |
| B | Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). |
| * | Value outside QC acceptance criteria |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| Dry | Sample results reported on a dry weight basis |
| Wet | Sample results reported on a wet weight basis |
| RPD | Relative Percent Difference |
| LOD | Limit of Detection (LOD): the minimum estimated concentration of a target analyte that can be detected reliably. Concentrations at the LOD or between the LOD and LOQ are flagged estimated with either a 'J' qualifier or client-specific qualifier |
| LOQ | Limit of Quantitation (LOQ): the minimum concentration of a target analyte that can be quantified reliably |

# LABORATORY DATA RESULTS

## LIQUID/OIL SAMPLE FROM DRUM IC-005 (J1C1N7)

## Radionuclide Results
## Sample: J1C1N7, Radionuclides

EBERLINE ANALYTICAL/RICHMOND
SAMPLE DELIVERY GROUP K2290

7134-001 J1C1N7

DATA SHEET

| | | | |
|---|---|---|---|
| SDG | 7134 | Client/Case no | Hanford SDG K2290 |
| Contact | N. Joseph Verville | Contract | No. S00W235A00 |
| Lab sample id | S009005-01 | Client sample id | J1C1N7 |
| Dept sample id | 7134-001 | Location/Matrix | 618-10/Oil in Drums/618A LIQUID |
| Received | 09/01/10 | Collected/Volume | 08/25/10 09:15 604 mL |
| | | Custody/SAF No | RC-155-004 RC-155 |

| ANALYTE | CAS NO | RESULT pCi/mL | 2σ ERR (COUNT) | MDA pCi/mL | RDL pCi/mL | QUALI-FIERS | TEST |
|---|---|---|---|---|---|---|---|
| Gross Alpha | 12587-46-1 | 0.265 | 1.2 | 2.33 | 10.0 | U | 93A |
| Gross Beta | 12587-47-2 | 1.10 | 3.2 | 5.32 | 15.0 | U | 93B |
| Potassium 40 | 13966-00-2 | U | | 0.964 | | U | GAM |
| Cobalt 60 | 10198-40-0 | U | | 0.056 | 0.050 | U | GAM |
| Cesium 137 | 10045-97-3 | 0.130 | 0.052 | 0.059 | 0.050 | | GAM |
| Radium 226 | 13982-63-3 | U | | 0.098 | 0.100 | U | GAM |
| Radium 228 | 15262-20-1 | U | | 0.212 | 0.200 | U | GAM |
| Europium 152 | 14683-23-9 | U | | 0.135 | 0.100 | U | GAM |
| Europium 154 | 15585-10-1 | U | | 0.141 | 0.100 | U | GAM |
| Europium 155 | 14391-16-3 | U | | 0.105 | 0.100 | U | GAM |
| Thorium 228 | 14274-82-9 | U | | 0.073 | | U | GAM |
| Thorium 232 | TH-232 | U | | 0.212 | | U | GAM |
| Uranium 235 | 15117-96-1 | U | | 0.243 | | U | GAM |
| Uranium 238 | U-238 | U | | 6.56 | | U | GAM |
| Americium 241 | 14596-10-2 | 1.39 | 0.24 | 0.292 | | | GAM |

618-10 & 618-11 Field Remediation - Other

**DATA SHEETS**
Page 1
**SUMMARY DATA SECTION**
Page 10

| | |
|---|---|
| Lab id | EBRLNE |
| Protocol | Hanford1 |
| Version | Ver 1.0 |
| Form | DVD-DS |
| Version | 3.06 |
| Report date | 09/24/10 |

# Gamma Energy/Spectrum Analysis (GEA) Results
# Sample: J1C1N7, GEA

Apex™

8/26/2010 4:43:57PM Page 1 of 4

Analysis Report for RCF25416

J1C1N7 SAF:RC-155 618-10/OIL IN DRUM/618A-10-0092

## GAMMA SPECTRUM ANALYSIS

| | |
|---|---|
| Sample Identification | : RCF25416 |
| Sample Description | : J1C1N7 SAF:RC-155 618-10/OIL IN DRUM/618A-10-0092 |
| Sample Type | : 125 ml Poly Bottle |
| Sample Size | : 1.200E+02 mL |
| Facility | : Default |
| Sample Taken On | : 8/25/2010 9:15:00AM |
| Acquisition Started | : 8/26/2010 2:43:42PM |
| Procedure | : 125ml Poly Bottle |
| Operator | : RCT |
| Detector Name | : GEA2703 |
| Geometry | : 125 ml Poly Bottle |
| Live Time | : 7200.0 seconds |
| Real Time | : 7201.6 seconds |
| Dead Time | : 0.02 % |
| Peak Locate Threshold | : 3.00 |
| Peak Locate Range (in channels) | : 40 - 4096 |
| Peak Area Range (in channels) | : 40 - 4096 |
| Identification Energy Tolerance | : 1.000 keV |
| Energy Calibration Used Done On | : 2/4/2010 |
| Efficiency Calibration Used Done On | : 3/27/2010 |
| Efficiency Calibration Description | : GEA2703 125mlPBottle Cal032610 80400-238 |
| Sample Number | : 5979 |

## INTERFERENCE CORRECTED REPORT

| Nuclide Name | Nuclide Id Confidence | Wt mean Activity (pCi/mL) | Wt mean Activity Uncertainty | Comments |
|---|---|---|---|---|
| AM-241 | 0.998 | 9.82E-02 | 1.15E-01 | LMOA BW 0830/C |

# Chemical Analytical Results
# Sample: J1C1N7, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-155 | |
| 2620 Fermi Avenue | Project Number: K2290 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/27/2010 10:57 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | | |
| 1,1,1-Trichloroethane | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2,2-Tetrachloroethane | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1,2-Trichloroethane | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethane | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,1-Dichloroethene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethane | 10000 | U | 10000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloroethene (total) | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 1,2-Dichloropropane | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Butanone | 20000 | U | 20000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 2-Hexanone | 20000 | U | 20000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| 4-Methyl-2-pentanone | 20000 | U | 20000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| **Acetone** | **255000** | D | 20000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Benzene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromodichloromethane | 10000 | U | 10000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromoform | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Bromomethane | 16700 | U | 16700 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Disulfide | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Carbon Tetrachloride | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Chlorobenzene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroethane | 16700 | U | 16700 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloroform | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Chloromethane | 16700 | U | 16700 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,2-Dichloroethene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| cis-1,3-Dichloropropene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Dibromochloromethane | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Ethylbenzene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Methylene Chloride | 10000 | U | 10000 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Styrene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Tetrachloroethene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,2-Dichloroethene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Toluene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| trans-1,3-Dichloropropene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Trichloroethene | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Vinyl chloride | 16700 | U | 16700 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| Xylenes, total | 8330 | U | 8330 | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| **TIC:C2 Benzene 1** | **18700** | J, D | | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| **TIC:Alkane 1** | **14700** | J, D | | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| **TIC:Uknown 3** | **24600** | J, D | | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| **TIC:Uknown 2** | **15200** | J, D | | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |

## Sample: J1C1N7, VOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-155 | |
| 2620 Fermi Avenue | Project Number: K2290 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/27/2010 10:57 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Volatile Organic Compounds by SW846 8260B** | | | | | | | | |
| **TIC:Uknown 1** | **15400** J, D | | ug/kg | 5 | L009343 | 09/07/2010 | 09/07/2010 | 8260B |
| *Surrogate: 1,2-Dichloroethane-d4* | *95 %* | *63-151* | | | *L009343* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: Toluene-d8* | *98 %* | *68-140* | | | *L009343* | *09/07/2010* | *09/07/2010* | *8260B* |
| *Surrogate: 4-Bromofluorobenzene* | *105 %* | *66-122* | | | *L009343* | *09/07/2010* | *09/07/2010* | *8260B* |

## Sample: J1C1N7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-155<br>Project Number: K2290<br>Project Manager: Joan Kessner | Reported:<br>09/22/2010 09:20 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 1,2-Dichlorobenzene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 1,3-Dichlorobenzene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 1,4-Dichlorobenzene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,4,5-Trichlorophenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,4,6-Trichlorophenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,4-Dichlorophenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,4-Dimethylphenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,4-Dinitrophenol | 1010000 | U | 1010000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,4-Dinitrotoluene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2,6-Dinitrotoluene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2-Chloronaphthalene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2-Chlorophenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2-Methylnaphthalene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2-Methylphenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2-Nitroaniline | 1010000 | U | 1010000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 2-Nitrophenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 3,3'-Dichlorobenzidine | 406000 | U | 406000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 3-Nitroaniline | 1010000 | U | 1010000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4,6-Dinitro-2-methylphenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4-Bromophenyl Phenyl Ether | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4-Chloro-3-methylphenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4-Chloroaniline | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4-Chlorophenyl Phenyl Ether | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 3- and/or 4-Methylphenol | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4-Nitroaniline | 1010000 | U | 1010000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| 4-Nitrophenol | 1010000 | U | 1010000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Acenaphthene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Acenaphthylene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Anthracene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Benz[a]anthracene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Benzo[a] pyrene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Benzo[b] fluoranthene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Benzo[g,h,i] perylene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Benzo[k] fluoranthene | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Bis(2-chloroethoxy) methane | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Bis(2-chloroethyl) ether | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Bis(2-chloroisopropyl) ether | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Bis(2-ethylhexyl) phthalate | 203000 | U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |

## Sample: J1C1N7, SVOAs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-155<br>Project Number: K2290<br>Project Manager: Joan Kessner | Reported:<br>09/22/2010 09:20 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Semivolatile Organic Compounds by SW846 8270C** | | | | | | | | |
| Butyl Benzyl Phthalate | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Carbazole | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Chrysene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Dibenz[a,h]anthracene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Dibenzofuran | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Diethyl Phthalate | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Dimethyl Phthalate | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Di-n-butyl Phthalate | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Di-n-octyl Phthalate | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Fluoranthene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Fluorene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Hexachlorobenzene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Hexachlorobutadiene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Hexachlorocyclopentadiene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Hexachloroethane | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Indeno[1,2,3-cd]pyrene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Isophorone | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Naphthalene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Nitrobenzene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| N-Nitrosodi-n-propylamine | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| N-Nitrosodiphenylamine | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Pentachlorophenol | 1010000 U | 1010000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Phenanthrene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Phenol | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| Pyrene | 203000 U | 203000 | ug/kg | 1 | L009193 | 09/15/2010 | 09/20/2010 | 8270C |
| *Surrogate: 2-Fluorophenol* | *77 %* | *25-121* | | | *L009193* | *09/15/2010* | *09/20/2010* | *8270C* |
| *Surrogate: Phenol-d5* | *77 %* | *24-113* | | | *L009193* | *09/15/2010* | *09/20/2010* | *8270C* |
| *Surrogate: Nitrobenzene-d5* | *86 %* | *23-120* | | | *L009193* | *09/15/2010* | *09/20/2010* | *8270C* |
| *Surrogate: 2-Fluorobiphenyl* | *91 %* | *30-115* | | | *L009193* | *09/15/2010* | *09/20/2010* | *8270C* |
| *Surrogate: 2,4,6-Tribromophenol* | *60 %* | *19-122* | | | *L009193* | *09/15/2010* | *09/20/2010* | *8270C* |
| *Surrogate: p-Terphenyl-d14* | *84 %* | *18-137* | | | *L009193* | *09/15/2010* | *09/20/2010* | *8270C* |

## Sample: J1C1N7, PCBs

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-155 | |
| 2620 Fermi Avenue | Project Number: K2290 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/19/2010 08:00 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| | | **Lionville Laboratory** | | | | | | |
| **Polychlorinated Biphenyls by SW846 8082** | | | | | | | | |
| Aroclor 1016 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| Aroclor 1221 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| Aroclor 1232 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| Aroclor 1242 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| Aroclor 1248 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| Aroclor 1254 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| Aroclor 1260 | 374 U | 374 | ug/kg | 1 | L009079 | 09/08/2010 | 09/13/2010 | 8082 |
| *Surrogate: Decachlorobiphenyl* | *11 %* | *10-150* | | | *L009079* | *09/08/2010* | *09/13/2010* | *8082* |
| *Surrogate: Tetrachloro-meta-xylene* | *53 %* | *10-150* | | | *L009079* | *09/08/2010* | *09/13/2010* | *8082* |

## Sample: J1C1N7, Metals

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc. | Project: RC-155 | |
| 2620 Fermi Avenue | Project Number: K2290 | Reported: |
| Richland WA, 99354 | Project Manager: Joan Kessner | 09/24/2010 07:17 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lionville Laboratory** | | | | | | |
| **Metals by SW846 6000/7000 series** | | | | | | | | | |
| **Aluminum** | **11.0** | B | 18.5 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Antimony | 0.926 | U | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Arsenic | 0.926 | U | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Barium** | **7.67** | | 0.463 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Beryllium | 0.185 | U | 0.185 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Boron** | **0.667** | B | 1.85 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Cadmium** | **0.669** | | 0.231 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Calcium** | **43.0** | | 18.5 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Chromium** | **1.37** | | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Cobalt | 2.78 | U | 2.78 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Copper** | **5.13** | | 1.85 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Iron** | **152** | | 18.5 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Lead** | **1.43** | | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Magnesium** | **2.82** | B | 4.63 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Manganese** | **1.25** | | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Molybdenum** | **0.298** | B | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Nickel | 2.31 | U | 2.31 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Potassium** | **26.5** | B | 92.6 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Selenium | 0.926 | U | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Silicon** | **30.8** | | 5.56 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Silver** | **1.98** | | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Sodium** | **444** | | 46.3 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| Vanadium | 0.926 | U | 0.926 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Zinc** | **9.81** | | 2.78 | mg/kg | 1 | L009264 | 09/21/2010 | 09/22/2010 | 6010B |
| **Mercury** | **0.0905** | | 0.0300 | mg/kg wet | 1 | L009244 | 09/21/2010 | 09/21/2010 | 7471A |

## Sample: J1C1N7, Wet Chemistry

**Wet Chemistry**
**Lionville Laboratory**

| Analyte | Result and Qualifier | LOD | LOQ | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **J1C1N7 (1009007-01) Oil** | | | | | | | | | **F-01** |
| Ignitability | | | 40 | °F | 1 | L009170 | 09/14/2010 | 09/14/2010 | Pensky-Marten Closed Cup |

## Sample: J1C1N7, Poly Aromatic Compounds

**264 Welsh Pool Road**
**Exton, PA 19341**
**Phone: 610-280-3000**
**Fax: 610-280-3041**

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-155<br>Project Number: K2290<br>Project Manager: Joan Kessner | **Reported:**<br>09/22/2010 12:24 |

**J1C1N7**
**1009007-01 (Oil)**

**Lionville Laboratory**

**Polynuclear Aromatic Compounds by SW846 8310**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Acenaphthene** | **9640** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| Acenaphthylene | 145 U | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Anthracene** | **183** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Fluoranthene** | **2980** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Fluorene** | **607** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Indeno[1,2,3-cd]pyrene** | **1610** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Naphthalene** | **23600** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Phenanthrene** | **1260** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Benzo[a] pyrene** | **65.9** J, D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Benzo[b] fluoranthene** | **113** J, D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Benzo[g,h,i] perylene** | **121** J, D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| Benzo[k] fluoranthene | 145 U | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Benz[a]anthracene** | **38.4** J, D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Chrysene** | **73.2** J, D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| Dibenz[a,h]anthracene | 145 U | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| **Pyrene** | **321** D | 145 | ug/kg | 2 | L009194 | 09/15/2010 | 09/21/2010 | 8310 |
| *Surrogate: Triphenylene* | *101 %* | *68-129* | | | *L009194* | *09/15/2010* | *09/21/2010* | *8310* |

## Sample: J1C1N7, Petroleum Hydrocarbons

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

| | | |
|---|---|---|
| WC-Hanford, Inc.<br>2620 Fermi Avenue<br>Richland WA, 99354 | Project: RC-155<br>Project Number: K2290<br>Project Manager: Joan Kessner | Reported:<br>09/23/2010 14:18 |

**J1C1N7**
**1009007-01 (Oil)**

| Analyte | Result and Qualifier | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|
| **Lionville Laboratory** | | | | | | | | |
| **Extractable Petroleum Hydrocarbons by SW846 8015** | | | | | | | | |
| Diesel Range Organics | 2170000 U | 2170000 | ug/kg | 1 | L009192 | 09/15/2010 | 09/22/2010 | 8015M |
| **Motor Oil** | **3980000 J** | 6520000 | ug/kg | 1 | L009192 | 09/15/2010 | 09/22/2010 | 8015M |
| *Surrogate: p-Terphenyl* | *99 %* | *39-129* | | | *L009192* | *09/15/2010* | *09/22/2010* | *8015M* |

# APPENDIX C

# DETECTED RADIONUCLIDES

## 618-10-1 Detected Radionuclides

**618-10-1 Test Pit Northeast Section**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross Alpha | 10.4 | 3.66 | NA | NA |
| Gross Beta | 14 | 5.28 | NA | NA |
| Carbon-14 | 1.43 | 0.752 | 8.7 | NA |
| Uranium-233/234 | 0.562 | 0.196 | 27.2 | 17.9 |
| Uranium-238 | 0.46 | 0.196 | 26.2 | 17.3 |
| Potassium-40 | 12.4 | 0.232 | NA | NA |
| Cesium-137 | 0.107 | 0.025 | 6.2 | NA |
| Radium-226 | 0.379 | 0.042 | NA | NA |
| Radium-228 | 0.616 | 0.104 | NA | NA |
| Thorium-232 | 0.616 | 0.104 | 1 | NA |
| Radium-226 GEA | 0.207 | 0.07 | NA | NA |
| Thorium-232 GEA | 0.245 | 0.079 | 1 | NA |

**618-10-1 Test Pit Southeast Section**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross Alpha | 10.8 | 3.01 | NA | NA |
| Gross Beta | 21.8 | 5.09 | NA | NA |
| Carbon-14 | 1.42 | 0.711 | 8.7 | NA |
| Uranium-233/234 | 0.549 | 0.2 | 27.2 | 17.9 |
| Uranium-238 | 0.758 | 0.2 | 26.2 | 17.3 |
| Lead-212 GEA | 0.22 | 0.077 | NA | NA |
| Radiuim-226 GEA | 0.186 | 0.053 | NA | NA |
| Thorium-232 GEA | 0.184 | 0.06 | 1 | NA |
| Uranium-235 GEA | 0.0338 | 0.04 | 26.2 | 17.3 |

*Remedial Design Report/Remedial Action Work Plan for the 300 Area (DOE/RL-2001-47 Rev. 3)

**618-10-1 Test Pit South Middle**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross Alpha | 7.99 | 3.82 | NA | NA |
| Gross Beta | 19 | 8.07 | NA | NA |
| Carbon-14 | 1.43 | 0.707 | 8.7 | NA |
| Uranium-233/234 | 0.576 | 0.245 | 27.2 | 17.9 |
| Uranium-238 | 0.64 | 0.245 | 26.2 | 17.3 |
| Plutonium-239/240 | 1.34 | 0.381 | 35.1 | NA |
| Potassium-40 | 11.9 | 0.236 | NA | NA |
| Cesium-137 | 0.037 | 0.024 | 6.2 | NA |
| Radium-226 | 0.406 | 0.045 | NA | NA |
| Radium-228 | 0.535 | 0.096 | NA | NA |
| Thorium-228 | 0.558 | 0.031 | NA | NA |
| Thorium-232 | 0.535 | 0.096 | 1 | NA |
| Americium-241 | 0.107 | 0.032 | 32.1 | NA |
| Lead-212 GEA | 0.212 | 0.075 | NA | NA |
| Radiuim-226 GEA | 0.199 | 0.047 | NA | NA |
| Thorium-232 GEA | 0.202 | 0.04 | 1 | NA |
| Uranium-238 GEA | 0.283 | 0.42 | 26.2 | 17.3 |

**618-10-1 Test Pit North Middle Section**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross Alpha | 1.13 | 0.4 | NA | NA |
| Gross Beta | 2.15 | 0.644 | NA | NA |
| Carbon-14 | 1.35 | 0.722 | 8.7 | NA |
| Uranium-233/234 | 0.68 | 0.168 | 27.2 | 17.9 |
| Uranium-238 | 0.592 | 0.168 | 26.2 | 17.3 |
| Plutonium-239/240 | 1.92 | 0.262 | 35.1 | NA |
| Potassium-40 | 12 | 0.16 | NA | NA |
| Radium-226 | 0.356 | 0.038 | NA | NA |
| Radium-228 | 0.574 | 0.077 | NA | NA |
| Thorium-228 | 0.556 | 0.027 | NA | NA |
| Thorium-232 | 0.574 | 0.077 | 1 | NA |
| Americium-241 | 0.192 | 0.116 | 32.1 | NA |
| Lead -212 GEA | 0.178 | 0.069 | NA | NA |
| Radiuim-226 GEA | 0.176 | 0.045 | NA | NA |
| Thorium-232 GEA | 0.158 | 0.053 | 1 | NA |

*Remedial Design Report/Remedial Action Work Plan for the 300 Area (DOE/RL-2001-47 Rev. 3)

**618-10-1 Test Pit Northwest Section**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross Alpha | 1.01 | 0.341 | NA | NA |
| Gross Beta | 1.44 | 0.492 | NA | NA |
| Carbon-14 | 1.77 | 0.786 | 8.7 | NA |
| Uranium-233/234 | 0.406 | 0.172 | 27.2 | 17.9 |
| Uranium-238 | 0.473 | 0.172 | 26.2 | 17.3 |
| Potassium-40 | 12.3 | 0.169 | NA | NA |
| Cesium-137 | 0.035 | 0.017 | 6.2 | NA |
| Radium-226 | 0.439 | 0.043 | NA | NA |
| Radium-228 | 0.67 | 0.106 | NA | NA |
| Thorium-228 | 0.524 | 0.024 | NA | NA |
| Thorium-232 | 0.67 | 0.106 | 1 | NA |
| Americium-241 | 0.172 | 0.141 | 32.1 | NA |
| Lead-212 GEA | 0.232 | 0.078 | NA | NA |
| Radiuim-226 GEA | 0.168 | 0.058 | NA | NA |
| Thorium-232 GEA | 0.171 | 0.057 | 1 | NA |

**618-10-1 Test Pit Southwest Section**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Gross Alpha | 12.5 | 3.49 | NA | NA |
| Gross Beta | 15 | 5.51 | NA | NA |
| Carbon-14 | 1.15 | 0.696 | 8.7 | NA |
| Uranium-233/234 | 0.457 | 0.175 | 27.2 | 17.9 |
| Uranium-238 | 0.594 | 0.175 | 26.2 | 17.3 |
| Plutonium-239/240 | 0.446 | 0.341 | 35.1 | NA |
| Potassium-40 | 12.1 | 0.337 | NA | NA |
| Cesium-137 | 0.072 | 0.038 | 6.2 | NA |
| Radium-226 | 0.375 | 0.073 | NA | NA |
| Radium-228 | 0.706 | 0.15 | NA | NA |
| Thorium-228 | 0.562 | 0.044 | NA | NA |
| Thorium-232 | 0.706 | 0.15 | 1 | NA |
| Radiuim-226 GEA | 0.189 | 0.071 | NA | NA |
| Thorium-232 GEA | 0.144 | 0.059 | 1 | NA |

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## 618-10-8 Detected Radionuclides

### 618-10-8 Test Pit Grid #1

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.22 | 0.747 | 8.7 | NA |
| Uranium-233/234 | 0.506 | 0.255 | 27.2 | 17.9 |
| Uranium-238 | 0.373 | 0.204 | 26.2 | 17.3 |
| Potassium-40 | 12.2 | 0.146 | NA | NA |
| Cesium-137 | 0.024 | 0.022 | NA | NA |
| Radium-226 | 0.367 | 0.035 | 6.2 | NA |
| Radium-228 | 0.532 | 0.07 | NA | NA |
| Thorium-228 | 0.551 | 0.025 | 2.3 | NA |
| Thorium-232 | 0.532 | 0.07 | 1 | NA |
| Carbon-14 | 1.22 | 0.747 | 8.7 | NA |
| Uranium-233/234 | 0.506 | 0.255 | 27.2 | 17.9 |
| Lead-212 GEA | 0.148 | 0.078 | NA | NA |
| Radiuim-226 GEA | 0.159 | 0.067 | NA | NA |
| Thorium-232 GEA | 0.175 | 0.066 | 1 | NA |

### 618-10-8 Test Pit Grid #2

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.46 | 0.774 | 8.7 | NA |
| Uranium-233/234 | 0.392 | 0.25 | 27.2 | 17.9 |
| Uranium-238 | 0.457 | 0.25 | 26.2 | 17.3 |
| Plutonium-239/240 | 0.363 | 0.309 | 35.1 | NA |
| Potassium-40 | 11.4 | 0.129 | NA | NA |
| Radium-226 | 0.351 | 0.038 | NA | NA |
| Radium-228 | 0.488 | 0.085 | NA | NA |
| Thorium-228 | 0.492 | 0.028 | 2.3 | NA |
| Thorium-232 | 0.488 | 0.085 | 1 | NA |
| Lead-212 GEA | 0.246 | 0.072 | NA | NA |
| Radiuim-226 GEA | 0.23 | 0.064 | NA | NA |
| Thorium-232 GEA | 0.188 | 0.072 | 1 | NA |
| Uranium-238 GEA | 0.212 | 0.259 | 26.2 | 17.3 |

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**618-10-8 Test Pit Grid #3**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.03 | 0.757 | 8.7 | NA |
| Uranium-233/234 | 0.335 | 0.233 | 27.2 | 17.9 |
| Uranium-238 | 0.426 | 0.233 | 26.2 | 17.3 |
| Potassium-40 | 11.1 | 0.247 | NA | NA |
| Cesium-137 | 0.408 | 0.02 | NA | NA |
| Radium-226 | 0.334 | 0.04 | 6.2 | NA |
| Radium-228 | 0.579 | 0.096 | NA | NA |
| Thorium-228 | 0.5 | 0.028 | 2.3 | NA |
| Thorium-232 | 0.579 | 0.096 | 1 | NA |
| Cesium-137 GEA | 0.0815 | 0.04 | 8.7 | NA |
| Lead-212 GEA | 0.247 | 0.1 | NA | NA |
| Radiuim-226 GEA | 0.211 | 0.061 | NA | NA |
| Thorium-232 GEA | 0.247 | 0.078 | 1 | NA |

**618-10-8 Test Pit Grid #4**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.26 | 0.769 | 8.7 | NA |
| Uranium-233/234 | 0.846 | 0.259 | 27.2 | 17.9 |
| Uranium-238 | 0.508 | 0.259 | 26.2 | 17.3 |
| Potassium-40 | 12.2 | 0.24 | NA | NA |
| Cesium-137 | 0.034 | 0.025 | NA | NA |
| Radium-226 | 0.359 | 0.032 | 6.2 | NA |
| Radium-228 | 0.537 | 0.107 | NA | NA |
| Thorium-228 | 0.517 | 0.023 | 2.3 | NA |
| Thorium-232 | 0.537 | 0.107 | 1 | NA |
| Lead-212 GEA | 0.269 | 0.066 | NA | NA |
| Radiuim-226 GEA | 0.228 | 0.056 | NA | NA |
| Thorium-232 GEA | 0.224 | 0.039 | 1 | NA |
| Uranium-238 GEA | 0.118 | 0.241 | 26.2 | 17.3 |

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**618-10-8 Test Pit Grid #5**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.08 | 0.736 | 8.7 | NA |
| Uranium-233/234 | 0.663 | 0.242 | 27.2 | 17.9 |
| Uranium-238 | 0.947 | 0.242 | 26.2 | 17.3 |
| Potassium-40 | 12.2 | 0.152 | NA | NA |
| Radium-226 | 0.376 | 0.037 | NA | NA |
| Radium-228 | 0.624 | 0.078 | NA | NA |
| Thorium-228 | 0.56 | 0.024 | 2.3 | NA |
| Thorium-232 | 0.624 | 0.078 | 1 | NA |
| Lead-212 GEA | 0.277 | 0.104 | NA | NA |
| Radiuim-226 GEA | 0.222 | 0.07 | NA | NA |
| Thorium-232 GEA | 0.242 | 0.048 | 1 | NA |
| Uranium-238 GEA | 0.292 | 0.426 | 26.2 | 17.3 |

**618-10-8 Test Pit Grid #6**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.8 | 0.72 | 8.7 | NA |
| Uranium-233/234 | 0.745 | 0.204 | 27.2 | 17.9 |
| Uranium-238 | 0.905 | 0.204 | 26.2 | 17.3 |
| Plutonium-239/240 | 0.228 | 0.193 | 35.1 | NA |
| Potassium-40 | 12.4 | 0.156 | NA | NA |
| Cesium-137 | 0.346 | 0.021 | 6.2 | NA |
| Radium-226 | 0.366 | 0.03 | NA | NA |
| Radium-228 | 0.639 | 0.084 | NA | NA |
| Thorium-228 | 0.593 | 0.027 | 2.3 | NA |
| Thorium-232 | 0.639 | 0.084 | 1 | NA |
| Cesium-137 GEA | 0.115 | 0.039 | 8.7 | NA |
| Radiuim-226 GEA | 0.177 | 0.069 | NA | NA |
| Thorium-232 GEA | 0.273 | 0.072 | 1 | NA |

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## 618-10-13 Detected Radionuclides

### 618-10-13 Test Pit Grid #1

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.963 | 0.747 | 8.7 | NA |
| Uranium-233/234 | 1.19 | 0.337 | 27.2 | 17.9 |
| Uranium-238 | 1.04 | 0.234 | 26.2 | 17.3 |
| Potassium-40 | 12.3 | 0.25 | NA | NA |
| Radium-226 | 0.431 | 0.043 | NA | NA |
| Radium-228 | 0.661 | 0.1 | NA | NA |
| Thorium-228 | 0.534 | 0.023 | 2.3 | NA |
| Thorium-232 | 0.661 | 0.1 | 1 | NA |
| Radiuim-226 GEA | 0.148 | 0.058 | NA | NA |
| Thorium-232 GEA | 0.216 | 0.066 | 1 | NA |

### 618-10-13 Test Pit Grid #2

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Uranium-233/234 | 0.604 | 0.243 | 27.2 | 17.9 |
| Uranium-238 | 0.667 | 0.243 | 26.2 | 17.3 |
| Potassium-40 | 11.5 | 0.254 | NA | NA |
| Radium-226 | 0.338 | 0.046 | NA | NA |
| Radium-228 | 0.564 | 0.112 | NA | NA |
| Thorium-228 | 0.566 | 0.03 | 2.3 | NA |
| Thorium-232 | 0.564 | 0.112 | 1 | NA |
| Lead-212 GEA | 0.182 | 0.067 | NA | NA |
| Radiuim-226 GEA | 0.166 | 0.05 | NA | NA |
| Thorium-232 GEA | 0.152 | 0.044 | 1 | NA |
| Uranium-238 GEA | 0.266 | 0.31 | 26.2 | 17.3 |

**618-10-13 Test Pit Grid #3**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.681 | 0.62 | 8.7 | NA |
| Uranium-233/234 | 0.857 | 0.205 | 27.2 | 17.9 |
| Uranium-238 | 0.429 | 0.205 | 26.2 | 17.3 |
| Potassium-40 | 10.4 | 0.263 | NA | NA |
| Radium-226 | 0.349 | 0.045 | NA | NA |
| Radium-228 | 0.613 | 0.123 | NA | NA |
| Thorium-228 | 0.499 | 0.032 | 2.3 | NA |
| Thorium-232 | 0.613 | 0.123 | 1 | NA |
| Lead-212 GEA | 0.163 | 0.073 | NA | NA |
| Radiuim-226 GEA | 0.17 | 0.057 | NA | NA |
| Thorium-232 GEA | 0.124 | 0.061 | 1 | NA |

**618-10-13 Test Pit Grid #4**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Uranium-233/234 | 1.12 | 0.205 | 27.2 | 17.9 |
| Uranium-238 | 0.831 | 0.205 | 26.2 | 17.3 |
| Potassium-40 | 11.9 | 0.128 | NA | NA |
| Radium-226 | 0.354 | 0.04 | NA | NA |
| Radium-228 | 0.476 | 0.082 | NA | NA |
| Thorium-228 | 0.46 | 0.021 | 2.3 | NA |
| Thorium-232 | 0.476 | 0.082 | 1 | NA |
| Lead-212 GEA | 0.167 | 0.075 | NA | NA |
| Radiuim-226 GEA | 0.152 | 0.058 | NA | NA |
| Thorium-232 GEA | 0.16 | 0.043 | 1 | NA |
| Uranium-238 GEA | 0.179 | 0.252 | 26.2 | 17.3 |

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**618-10-13 Test Pit Grid #5**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.726 | 0.569 | 8.7 | NA |
| Uranium-233/234 | 1.05 | 0.34 | 27.2 | 17.9 |
| Uranium-238 | 1.05 | 0.211 | 26.2 | 17.3 |
| Potassium-40 | 11.2 | 0.382 | NA | NA |
| Radium-226 | 0.404 | 0.057 | NA | NA |
| Radium-228 | 0.512 | 0.131 | NA | NA |
| Thorium-228 | 0.541 | 0.037 | 2.3 | NA |
| Thorium-232 | 0.512 | 0.131 | 1 | NA |
| Lead-212 GEA | 0.151 | 0.079 | NA | NA |
| Radiuim-226 GEA | 0.144 | 0.053 | NA | NA |
| Thorium-232 GEA | 0.223 | 0.066 | 1 | NA |

**618-10-13 Test Pit Grid #6**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.63 | 0.602 | 8.7 | NA |
| Uranium-233/234 | 0.651 | 0.208 | 27.2 | 17.9 |
| Uranium-238 | 0.461 | 0.208 | 26.2 | 17.3 |
| Potassium-40 | 11.6 | 0.176 | NA | NA |
| Radium-226 | 0.372 | 0.033 | NA | NA |
| Radium-228 | 0.564 | 0.074 | NA | NA |
| Thorium-228 | 0.578 | 0.027 | 2.3 | NA |
| Thorium-232 | 0.564 | 0.074 | 1 | NA |
| Lead-212 GEA | 0.181 | 0.065 | NA | NA |
| Radiuim-226 GEA | 0.166 | 0.056 | NA | NA |
| Thorium-232 GEA | 0.136 | 0.05 | 1 | NA |

**618-10-13 Test Pit Grid #7**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.19 | 0.656 | 8.7 | NA |
| Uranium-233/234 | 0.702 | 0.215 | 27.2 | 17.9 |
| Uranium-238 | 0.309 | 0.215 | 26.2 | 17.3 |
| Potassium-40 | 10.8 | 0.207 | NA | NA |
| Cesium-137 | 0.132 | 0.023 | NA | NA |
| Radium-226 | 0.352 | 0.038 | 6.2 | NA |
| Radium-228 | 0.523 | 0.08 | NA | NA |
| Thorium-228 | 0.474 | 0.022 | 2.3 | NA |
| Thorium-232 | 0.523 | 0.08 | 1 | NA |
| Lead-212 GEA | 0.16 | 0.082 | NA | NA |
| Radiuim-226 GEA | 0.207 | 0.075 | NA | NA |
| Thorium-232 GEA | 0.144 | 0.06 | 1 | NA |
| Uranium-235 GEA | 0.0272 | 0.042 | 2.7 | 1.8 |

**618-10-13 Test Pit Grid #8**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Uranium-233/234 | 0.396 | 0.216 | 27.2 | 17.9 |
| Uranium-238 | 0.736 | 0.216 | 26.2 | 17.3 |
| Potassium-40 | 11.3 | 0.181 | NA | NA |
| Radium-226 | 0.356 | 0.041 | NA | NA |
| Radium-228 | 0.621 | 0.074 | NA | NA |
| Thorium-228 | 0.536 | 0.028 | 2.3 | NA |
| Thorium-232 | 0.621 | 0.074 | 1 | NA |
| Lead-212 GEA | 0.164 | 0.064 | NA | NA |
| Radiuim-226 GEA | 0.153 | 0.051 | NA | NA |
| Thorium-232 GEA | 0.138 | 0.056 | 1 | NA |

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## 618-10-20 Detected Radionuclides

**618-10-20 Test Pit Grid #1**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.14 | 0.773 | 8.7 | NA |
| Uranium-233/234 | 0.531 | 0.15 | 27.2 | 17.9 |
| Uranium-238 | 0.57 | 0.15 | 26.2 | 17.3 |
| Potassium-40 | 11.6 | 0.13 | NA | NA |
| Radium-226 | 0.339 | 0.028 | NA | NA |
| Radium-228 | 0.554 | 0.058 | NA | NA |
| Thorium-228 | 0.541 | 0.02 | 2.3 | NA |
| Thorium-232 | 0.554 | 0.058 | 1 | NA |
| Lead-212 GEA | 0.167 | 0.066 | NA | NA |
| Radiuim-226 GEA | 0.158 | 0.047 | NA | NA |
| Thorium-232 GEA | 0.158 | 0.038 | 1 | NA |

**618-10-20 Test Pit Grid #2**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.16 | 0.796 | 8.7 | NA |
| Uranium-233/234 | 0.389 | 0.229 | 27.2 | 17.9 |
| Uranium-238 | 0.539 | 0.229 | 26.2 | 17.3 |
| Plutonium-239/240 | 0.364 | 0.309 | 38.8 | NA |
| Potassium-40 | 11.1 | 0.151 | NA | NA |
| Radium-226 | 0.358 | 0.031 | NA | NA |
| Radium-228 | 0.646 | 0.07 | NA | NA |
| Thorium-228 | 0.504 | 0.019 | 2.3 | NA |
| Thorium-232 | 0.646 | 0.07 | 1 | NA |
| Lead-212 GEA | 0.142 | 0.067 | NA | NA |
| Radiuim-226 GEA | 0.155 | 0.055 | NA | NA |
| Thorium-232 GEA | 0.151 | 0.035 | 1 | NA |
| Uranium-238 GEA | 0.0311 | 0.032 | 26.2 | 17.3 |

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**618-10-20 Test Pit Grid #3**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.841 | 0.774 | 8.7 | NA |
| Uranium-233/234 | 0.658 | 0.18 | 27.2 | 17.9 |
| Uranium-238 | 0.24 | 0.18 | 26.2 | 17.3 |
| Plutonium-239/240 | 3.09 | 0.296 | 35.1 | NA |
| Potassium-40 | 10.8 | 0.192 | NA | NA |
| Radium-226 | 0.389 | 0.042 | NA | NA |
| Radium-228 | 0.553 | 0.11 | NA | NA |
| Thorium-228 | 0.549 | 0.028 | 2.3 | NA |
| Thorium-232 | 0.553 | 0.11 | 1 | NA |
| Radiuim-226 GEA | 0.134 | 0.051 | NA | NA |
| Thorium-232 GEA | 0.19 | 0.064 | 1 | NA |
| Amercium-241 GEA | 0.0365 | 0.055 | 32.1 | 32.1 |

**618-10-20 Test Pit Grid #4**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 3.64 | 2.13 | 8.7 | NA |
| Uranium-233/234 | 0.729 | 0.223 | 27.2 | 17.9 |
| Uranium-238 | 0.67 | 0.223 | 26.2 | 17.3 |
| Potassium-40 | 11.3 | 0.183 | NA | NA |
| Radium-226 | 0.374 | 0.034 | NA | NA |
| Radium-228 | 0.567 | 0.075 | NA | NA |
| Thorium-228 | 0.548 | 0.023 | 2.3 | NA |
| Thorium-232 | 0.567 | 0.075 | 1 | NA |
| Lead-212 GEA | 0.213 | 0.069 | NA | NA |
| Radiuim-226 GEA | 0.192 | 0.048 | NA | NA |
| Thorium-232 GEA | 0.173 | 0.038 | 1 | NA |

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**618-10-20 Test Pit Grid #5**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.12 | 1.02 | 8.7 | NA |
| Uranium-233/234 | 0.516 | 0.18 | 27.2 | 17.9 |
| Uranium-238 | 0.516 | 0.18 | 26.2 | 17.3 |
| Plutonium-239/240 | 0.404 | 0.281 | 35.1 | NA |
| Potassium-40 | 12.4 | 0.132 | NA | NA |
| Radium-226 | 0.398 | 0.028 | NA | NA |
| Radium-228 | 0.64 | 0.06 | NA | NA |
| Thorium-228 | 0.587 | 0.019 | 2.3 | NA |
| Thorium-232 | 0.64 | 0.06 | 1 | NA |
| Lead-212 GEA | 0.162 | 0.07 | NA | NA |
| Radiuim-226 GEA | 0.138 | 0.046 | NA | NA |
| Thorium-232 GEA | 0.173 | 0.048 | 1 | NA |
| Amercium-241 GEA | 0.532 | 0.068 | 32.1 | 32.1 |

**618-10-20 Test Pit Grid #6**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 0.883 | 0.802 | 8.7 | NA |
| Uranium-233/234 | 0.614 | 0.224 | 27.2 | 17.9 |
| Uranium-238 | 0.556 | 0.224 | 26.2 | 17.3 |
| Potassium-40 | 8.86 | 0.134 | NA | NA |
| Radium-226 | 0.266 | 0.021 | NA | NA |
| Radium-228 | 0.405 | 0.052 | NA | NA |
| Thorium-228 | 0.427 | 0.021 | 2.3 | NA |
| Thorium-232 | 0.405 | 0.052 | 1 | NA |
| Lead-212 GEA | 0.204 | 0.073 | NA | NA |
| Radiuim-226 GEA | 0.171 | 0.053 | NA | NA |
| Thorium-232 GEA | 0.182 | 0.033 | 1 | NA |
| Uranium-238 GEA | 0.238 | 0.333 | 26.2 | 17.3 |

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## 618-10-2 Detected Radionuclides

### 618-10-2 Test Pit Grid #1

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.33 | 0.993 | 8.7 | NA |
| Uranium-233/234 | 0.61 | 0.194 | 27.2 | 17.9 |
| Uranium-238 | 0.534 | 0.194 | 26.2 | 17.3 |
| Potassium-40 | 12.1 | 0.189 | NA | NA |
| Cesium-137 | 0.029 | 0.024 | 6.2 | NA |
| Radium-226 | 0.341 | 0.039 | NA | NA |
| Radium-228 | 0.593 | 0.072 | NA | NA |
| Thorium-228 | 0.5 | 0.025 | 2.3 | NA |
| Thorium-232 | 0.593 | 0.072 | 1 | NA |
| Cesium-137 | 0.0495 | 0.0299 | 6.2 | NA |
| Cesium-137 GEA | 0.0495 | 0.03 | 6.2 | NA |
| Radiuim-226 GEA | 0.195 | 0.062 | NA | NA |
| Thorium-232 GEA | 0.178 | 0.067 | 1 | NA |

### 618-10-2 Test Pit Grid #2

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.54 | 1.36 | 8.7 | NA |
| Uranium-233/234 | 0.897 | 0.202 | 27.2 | 17.9 |
| Uranium-238 | 0.448 | 0.202 | 26.2 | 17.3 |
| Potassium-40 | 13.6 | 0.284 | NA | NA |
| Radium-226 | 0.43 | 0.047 | NA | NA |
| Radium-228 | 0.728 | 0.124 | NA | NA |
| Thorium-228 | 0.587 | 0.028 | 2.3 | NA |
| Thorium-232 | 0.728 | 0.124 | 1 | NA |
| Lead-212 GEA | 0.174 | 0.068 | NA | NA |
| Radiuim-226 GEA | 0.174 | 0.051 | NA | NA |
| Thorium-232 GEA | 0.168 | 0.037 | 1 | NA |

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**618-10-2 Test Pit Grid #3**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Uranium-233/234 | 0.329 | 0.252 | 27.2 | 17.9 |
| Uranium-238 | 0.526 | 0.252 | 26.2 | 17.3 |
| Potassium-40 | 12.2 | 0.297 | NA | NA |
| Cesium-137 | 0.078 | 0.036 | 6.2 | NA |
| Radium-226 | 0.425 | 0.062 | NA | NA |
| Radium-228 | 0.658 | 0.158 | NA | NA |
| Thorium-228 | 0.63 | 0.043 | 2.3 | NA |
| Thorium-232 | 0.658 | 0.158 | 1 | NA |
| Lead-212 GEA | 0.187 | 0.07 | NA | NA |
| Radiuim-226 GEA | 0.177 | 0.05 | NA | NA |
| Thorium-232 GEA | 0.185 | 0.037 | 1 | NA |

**618-10-2 Test Pit Grid #4**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | MDA **pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Uranium-233/234 | 0.439 | 0.21 | 27.2 | 17.9 |
| Uranium-238 | 0.522 | 0.21 | 26.2 | 17.3 |
| Potassium-40 | 12.6 | 0.25 | NA | NA |
| Cesium-137 | 0.059 | 0.029 | 6.2 | NA |
| Radium-226 | 0.39 | 0.042 | NA | NA |
| Radium-228 | 0.674 | 0.104 | NA | NA |
| Thorium-228 | 0.609 | 0.031 | 2.3 | NA |
| Thorium-232 | 0.674 | 0.104 | 1 | NA |
| Radiuim-226 GEA | 0.197 | 0.066 | NA | NA |
| Thorium-232 GEA | 0.267 | 0.068 | 1 | NA |

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**618-10-2 Test Pit Grid #5**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Uranium-233/234 | 0.596 | 0.253 | 27.2 | 17.9 |
| Uranium-238 | 0.629 | 0.253 | 26.2 | 17.3 |
| Potassium-40 | 13 | 0.225 | NA | NA |
| Radium-226 | 0.365 | 0.045 | NA | NA |
| Radium-228 | 0.746 | 0.082 | NA | NA |
| Thorium-228 | 0.608 | 0.031 | 2.3 | NA |
| Thorium-232 | 0.746 | 0.082 | 1 | NA |
| Lead-212 GEA | 0.206 | 0.071 | NA | NA |
| Radiuim-226 GEA | 0.159 | 0.053 | NA | NA |
| Thorium-232 GEA | 0.199 | 0.054 | 1 | NA |

**618-10-2 Test Pit Grid #6**

| Detected Radionuclides | | | Soil Lookup Values (pCi/g)* | |
|---|---|---|---|---|
| **ANALYTE** | **RESULT pCi/g** | **MDA pCi/g** | **Unrestricted Direct Exposure** | **Unrestricted GW/River Protection** |
| Carbon-14 | 1.25 | 0.893 | 8.7 | NA |
| Uranium-233/234 | 0.652 | 0.227 | 27.2 | 17.9 |
| Uranium-238 | 0.919 | 0.227 | 26.2 | 17.3 |
| Potassium-40 | 12.9 | 0.207 | NA | NA |
| Radium-226 | 0.383 | 0.038 | NA | NA |
| Radium-228 | 0.626 | 0.092 | NA | NA |
| Thorium-228 | 0.574 | 0.023 | 2.3 | NA |
| Thorium-232 | 0.626 | 0.092 | 1 | NA |
| Lead-212 GEA | 0.169 | 0.083 | NA | NA |
| Radiuim-226 GEA | 0.185 | 0.063 | NA | NA |
| Thorium-232 GEA | 0.205 | 0.066 | 1 | NA |
| Uranium-238 GEA | 0.251 | 0.319 | 26.2 | 17.3 |

*Remedial Design Report/Remedial Action Work Plan for the 300 Area (DOE/RL-2001-47 Rev. 3)

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# 618-11 Non-Intrusive Characterization Report

August 24, 2011


Dennis Crass, PM

Doug Akers, SME

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# EXECUTIVE SUMMARY

This report presents the non-intrusive characterization (NIC) measurement results for the 618-11 Burial Ground and provides a general assessment of the estimated exposure rates from each of the 618-11 vertical pipe units (VPU). Characterization results were obtained using an *in-situ* radiological multi-detector probe (MDP). The MDP system was developed under a separate contract (Contract DE-AC09-03NT42006) for the U.S. Department of Energy-HQ's *In-situ TRU Waste Delineation and Waste Removal at Hanford 618-10 and 618-11 Burial Ground Project.* Prior to deployment at the 618-11 Burial Ground the MDP system had been deployed at Hanford's 118-K-1 Burial Ground and the 618-10 Burial Ground sites.

The scope of the 618-11 NIC is described in the *Sampling and Analysis Plan for Characterization of the 618-11 Burial Ground,* DOE/RL-2011-02, Revision 0 (SAP). Based on results of the previous projects at 618-10 and 118-K-1 the SAP required only the collection and analysis of gross gamma data acquired by the MDP system through two cone penetrometers (CPT) installed at each VPU location.

Surface geophysical surveys conducted in March 2011 confirmed the location of 50 VPUs at the 618-11 Burial Ground. These surveys were completed prior to conducting NIC activities to accurately map the location and depths of the VPUs and establish coordinates for CPT installation in support of the NIC effort.

A total of 100 CPTs were installed to characterize 50 VPUs with the MDP system. The CPTs were installed approximately 6–inches from the outer edge and nominally 180° apart (on opposite sides) of each VPU. Characterization results were obtained using the AMP-100 gross gamma detector; one component of the MDP system to obtain screening level radiological characterization associated with:

1) the distribution of measureable activity in each VPU,
2) the maximum exposure rate for each VPU,
3) and the lowest depth at which activity was detected.

The data quality objectives and measurement performance requirements are prescribed by the SAP. The data will be used for planning future intrusive characterization activities (if required) and/or developing remediation strategies for the 618-11 VPUs. A summary of the measurement results for the VPUs is presented in the following table and includes the location and maximum radiation field identified in each VPU along with the lowest depth at which activity was detected using the AMP-100 gross rate meter.

**Table E1 - VPU Gross Rate Summary**

| VPU | Date | Maximum Gross Rate Location (CPT#/Depth [ft]) | Maximum Gross Rate (mR/hr) | Lowest Depth (LD) Activity Detected (ft) In CPT | Exposure Rate at LD (mR/hr) Exposure rates below 0.3 mR/hr are in *italics* |
|---|---|---|---|---|---|
| 1 | 5/12/11 | 2/-16.69 | 306 | CPT 1 – 21.69<br>CPT 2 – 21.69 | CPT 1 – *0.14*<br>CPT 2 – *0.17* |
| 2 | 5/12/11 | 1/-14.69 | 2439 | 1 – 22.69<br>2 – 22.69 | *1 – 0.16*<br>*2 – 0.06* |
| 3 | 5/16/11 | 2/-10.69 | 20.4 | 1 – 22.69<br>2 – 19.69 | *1 – 0.15*<br>2 – 5.0 |
| 4 | 5/16/11 | 2/-8.69 | 456 | 1 – 22.69<br>2 – 20.69 | 1 – *0.15*<br>2 – *0.03* |
| 5 | 5/17/11 | 2/-17.69 | 268.4 | 1 – 21.69<br>2 – 20.69 | 1 – *0.02*<br>2 – *0.03* |
| 6 | 5/17/11 | 2/-10.69 | 190.3 | 1 – 21.69<br>2 – 20.69 | 1 – *0.04*<br>2 – *0.09* |
| 7 | 5/18/11 | 2/-15.69 | 79.16 | 1 – 21.69<br>2 – 21.69 | 1 – *0.07*<br>2 – 6.05 |
| 8 | 5/18/11 | 1/-13.69 | 1049 | 1 – 20.69<br>2 – 20.69 | 1 – *0.04*<br>2 – *0.17* |
| 9 | 5/18/11 | 1/-15.69 | 211.8 | 1 – 21.69<br>2 – 20.69 | 1 – *0.06*<br>2 – *0.02* |
| 10 | 5/19/11 | 1/-17.69 | 523.3 | 1 – 22.69<br>2 – 19.69 | 1 – *0.14*<br>2 – 0.94 |
| 11 | 5/19/11 | 2/-13.69 | 56.4 | 1 – 20.69<br>2 – 18.69 | 1 – *0.15*<br>2 – 1.45 |
| 12 | 5/23/11 | 2/-14.69 | 321.9 | 1 – 21.69<br>2 – 20.69 | 1 – *0.06*<br>2 – *0.09* |
| 13 | 5/23/11 | 1/-17.69 | 23.42 | 1 – 19.69<br>2 – 21.69 | 1 – 1.06<br>2 – 0.34 |
| 14 | 5/23-24/11 | 2/-15.69 | 203.8 | 1 – 22.69<br>2 – 21.69 | 1 – *0.14*<br>2 – *0.04* |
| 15 | 5/24/11 | 1/-12.69 | 273.9 | 1 – 21.69<br>2 – 22.69 | 1 – *0.17*<br>2 – *0.08* |
| 16 | 5/24/11 | 2/-16.69 | 110.1 | 1 – 22.69<br>2 – 22.69 | 1 – *0.29*<br>2 – *0.03* |
| 17 | 5/25/11 | 2/-14.69 | 1095 | 1 – 22.69<br>2 – 18.69 | 1 – *0.12*<br>2 – 4.02 |
| 18 | 5/25/11 | 2/-15.69 | 1298 | 1 – 22.69<br>2 – 22.69 | 1 – *0.04*<br>2 – *0.11* |
| 19 | 5/25/11 | 2/-16.69 | 18.23 | 1 – 19.69<br>2 – 22.69 | 1 – *0.2*<br>2 – *0.06* |
| 20 | 5/25-26/11 | 2/-13.69 | 73.7 | 1 – 21.69<br>2 – 22.69 | 1 – *0.18*<br>2 – *0.02* |
| 21 | 6/16/11 | 2/-10.69 | 5.41 | 1 – 21.69<br>2 – 22.69 | 1 – *0.04*<br>2 – 0.3 |
| 22 | 6/16/11 | 1/-18.69 | 728.1 | 1 – 22.69<br>2 – 22.69 | 1 – *0.12*<br>2 – *0.03* |

| VPU | Date | Maximum Gross Rate Location (CPT#/Depth [ft]) | Maximum Gross Rate (mR/hr) | Lowest Depth (LD) Activity Detected (ft) In CPT | Exposure Rate at LD (mR/hr) Exposure rates below 0.3 mR/hr are in *italics* |
|---|---|---|---|---|---|
| 23 | 6/16/11 | 2/-16.69 | 1985 | 1 – 20.69<br>2 – 22.69 | 1 – *0.27*<br>2 – *0.15* |
| 24 | 6/15/11 | 1/-12.69 | 18.26 | 1 – 21.69<br>2 – 21.69 | 1 – *0.03*<br>2 – *0.01* |
| 25 | 6/15/11 | 2/-10.69 | 77.22 | 1 – 22.69<br>2 – 21.69 | 1 – *0.21*<br>2 – *0.17* |
| 26 | 6/15/11 | 2/-17.69 | 1217 | 1 – 21.69<br>2 – 22.69 | 1 – *0.22*<br>2 – *0.01* |
| 27 | 6/14/11 | 2/-17.69 | 40.11 | 1 – 19.69<br>2 – 22.69 | 1 – *0.01*<br>2 – *0.06* |
| 28 | 6/14/11 | 2/-11.69 | 0.23 | 1 – 19.69<br>2 – 19.69 | 1 – *0.03*<br>2 – *0.04* |
| 29 | 6/14/11 | 1/-5.69 | 0.35 | 1 – 17.69<br>2 – 20.69 | 1 – *0.24*<br>2 – *0.02* |
| 30 | 6/13/11 | 2/-15.69 | 345.4 | 1 – 22.69<br>2 – 22.69 | 1 – *0.01*<br>2 – *0.04* |
| 31 | 6/6/11 | 1/-15.69 | 2073 | 1 – 22.69<br>2 – 20.69 | 1 – *0.05*<br>2 – *0.04* |
| 32 | 6/6/11 | 2/-16.69 | 66 | 1 – 22.69<br>2 – 21.69 | 1 – *0.15*<br>2 – *0.02* |
| 33 | 6/2/11 | 2/-17.69 | 435 | 1 – 22.69<br>2 – 22.69 | 1 – *0.09*<br>2 – *0.01* |
| 34 | 6/2/11 | 1/-12.69 | 42 | 1 – 17.69<br>2 – 19.69 | 1 – 2.72<br>2 – *0.08* |
| 35 | 6/2/11 | 1/-14.69 | 101.2 | 1 – 19.69<br>2 – 19.69 | 1 – *0.22*<br>2 – 0.38 |
| 36 | 6/1/11 | 2/-7.69 | 26.85 | 1 – 21.69<br>2 – 21.69 | 1 – *0.06*<br>2 – *0.09* |
| 37 | 6/1/11 | 2/-10.69 | 1935 | 1 – 22.69<br>2 – 22.69 | 1 – *0.39*<br>2 – 0.16 |
| 38 | 5/31/11 | 1/-16.69 | 2169 | 1 – 20.69<br>2 – 22.69 | 1 – *0.07*<br>2 – *0.1* |
| 39 | 5/31/11 | 2/-12.69 | 21.27 | 1 – 20.69<br>2 – 20.69 | 1 – *0.1*<br>2 – *0.22* |
| 40 (CPT1) | 6/20/11 | 1/-9.69 | 0.76 | 1 – 21.69 | 1 – *0.1* |
| 41 | 6/13/11 | 2/-11.69 | 33.7 | 1 – 21.69<br>2 – 21.69 | 1 – *0.07*<br>2 – *0.15* |
| 42 | 6/09/11 | 2/-13.69 | 604.9 | 1 – 19.69<br>2 – 19.69 | 1 – 0.3<br>2 – *0.07* |
| 43 | 6/09/11 | 2/-15.69 | 2270 | 1 – 22.69<br>2 – 19.69 | 1 – *0.2*<br>2 – *0.04* |
| 44 | 6/9/11 | 2/-11.69 | 8909 | 1 – 22.69<br>2 – 22.69 | 1 – *0.15*<br>2 – *0.02* |

| VPU | Date | Maximum Gross Rate Location (CPT#/Depth [ft]) | Maximum Gross Rate (mR/hr) | Lowest Depth (LD) Activity Detected (ft) In CPT | Exposure Rate at LD (mR/hr) Exposure rates below 0.3 mR/hr are in *italics* |
|---|---|---|---|---|---|
| 45 | 6/8/11 | 2/-15.69 | 1781 | 1 – 19.69<br>2 – 22.69 | 1 – 0.38<br>2 – *0.04* |
| 46 | 6/8/11 | 2/-10.69 | 3489 | 1 – 20.69<br>2 – 21.69 | 1 – *0.1*<br>2 – *0.03* |
| 47 | 6/8/11 | 2/-16.69 | 3649 | 1 – 20.69<br>2 – 22.69 | 1 – *0.2*<br>2 – *0.19* |
| 48 | 6/7/11 | 2/-7.69 | 490 | 1 – 20.69<br>2 – 22.69 | 1 – *0.13*<br>2 – *0.01* |
| 49 | 6/7/11 | 2/-16.69 | 237 | 1 – 19.69<br>2 – 22.69 | 1 – *0.14*<br>2 – *0.02* |
| 50 | 6/7/11 | 2/-14.69 | 103 | 1 – 21.69<br>2 – 21.69 | 1 – *0.03*<br>2 – *0.18* |

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# ACRONYMS

| | |
|---|---|
| CPT | Cone Penetrometer Tube |
| DOE | United States Department of Energy |
| GM | Geiger-Mueller (detector) |
| GPR | Ground Penetrating Radar |
| INL | Idaho National Laboratory |
| MDP | Multi-Detector Probe |
| NIC | Non-Intrusive Characterization |
| NIST | National Institute of Standards and Technology |
| SAP | Sampling and Analysis Plan |
| SME | Subject Matter Experts |
| TRU | Transuranic |
| VPU | Vertical Pipe Units |
| WCH | Washington Closure Hanford |

# 618-11 NON-INTRUSIVE CHARACTERIZATION REPORT

## 1.0 PURPOSE

This report presents the non-intrusive characterization (NIC) measurement results for the 618-11 Burial Grounds and provides a general assessment of the exposure rates based on gross radiation measurements obtained from two cone penetrometers (CPT) installed nominally 180° apart at each Vertical Pipe Unit (VPU) location. As prescribed by the 618-11 Sampling and Analysis Plan, DOE/RL-2011-02, Revision 0, *Sampling and Analysis Plan for Characterization of the 618-11 Burial Ground* (SAP) only the collection and analysis of gross gamma data detectors has been included in this report. This data indicates the maximum exposure rate associated with each VPU and the lowest depth at which activity was detected.

Characterization results were obtained using an *in-situ* radiological multi-detector probe system (MDP). The MDP was developed under a separate contract (Contract DE-AC09-03NT42006) for the U.S. Department of Energy-HQ's *In-situ TRU Waste Delineation and Waste Removal at Hanford 618-10 and 618-11 Burial Ground Project.* After system development and prior to deployment at the 618-11 Burial Ground the MDP system had been deployed at Hanford's 118-K-1 Burial Ground and the 618-10 Burial Ground sites.

The full scope of the 618-11 NIC is described in the SAP. In accordance with the SAP, the term "non-intrusive," means burial ground structures will not be opened or exposed in a manner in which the contents of these features will be accessible to personnel or the surface environment.

A total of 50 VPUs were characterized with the MDP system using the AMP-100 gross gamma detector. The data quality objectives and measurement performance requirements are prescribed in the SAP and required only gross gamma data collection using the AMP-100 detector. The data obtained from this project will be used for planning future intrusive characterization activities (if required) and/or developing remediation strategies for the 618-11 VPUs.

A schematic drawing of the 618-11 Burial Ground is provided in Figure 1 illustrating the location of the VPUs within the burial ground and identifying the numbering sequence used to quantify the data obtained for each VPU during the characterization effort.

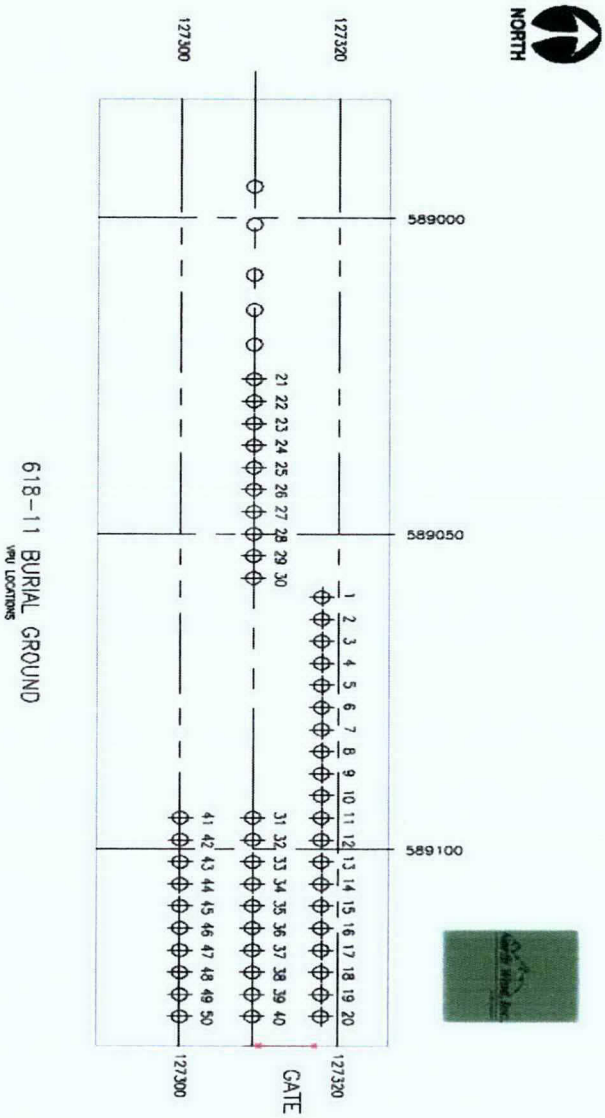



**Figure 1 - Schematic Drawing of the 618-11 Burial Ground VPUs**

## 1.1 Statement of the Problem

The 618-11 Burial Ground consists of 50 VPUs. Each VPU was constructed by welding five 55-gallon bottomless drums together and burying them vertically in trenches with about 10-feet of space between them. The VPUs are open to the soil at the bottom. The VPUs in the 618-11 Burial Ground began receiving waste in May 1963, primarily from the 325 Radiochemistry Laboratory and 327 Radiometallurgy Laboratory. Typical VPU contents included 1-liter cans of hot cell wastes (wipes, samples, tools, cutup equipment), 6-liter open top pails (referred to as milk pails) and 1-quart juice cans containing grinding discs, hot cell wastes and fuel fragment residues, and 6-liter cans containing filter traps and gunk catchers. In mid-1964, larger 1-gallon and 5-gallon containers were introduced for laboratory waste disposal. When dose rates became a personnel safety issue, the VPUs were backfilled with site soil, gravel, or concrete to provide shielding and reduce dose rates to acceptable levels.

The burial ground received a minimum of 2-feet of clean overburden soil when it was closed in December of 1967, with an additional 2-feet of clean topsoil added for surface stabilization in 1983. A safety basis requirement, as identified in WCH-184, Revision 1, *Technical Safety Requirements for 618-10 and 618-11 Burial Sites*, credited the existing soil overburden covering the VPUs at 618-11 as a passive design feature precluding soil overburden removal. As a result, in preparation for the surface geophysics activities, the burial ground vegetation was mowed and an additional 8-inches to one foot of gravel was provided over the VPU area. Limited records were kept of the burial ground disposal practices and disposal records do not include an inventory of the VPU contents. Therefore, an additional understanding of the quantity and condition of the material deposited in the VPUs is needed to help plan future remediation strategies.

## 1.2 Data Collection Methods

### 1.2.1 Development of the MDP System

The approach for *in-situ* characterization of VPUs was established during Phase I and Phase II of the *In-situ TRU Waste Delineation and Waste Removal at Hanford 618-10 and 618-11 Burial Ground Project* at the 118-K-1 waste site. This project was funded by the United States Department of Energy (DOE) Office of Environmental Management under contract number DE-AC09-03NT42006.

At the conclusion of cold demonstrations and laboratory verification at the Idaho National Laboratory (INL), the MDP system was ready for hot demonstration at a Hanford burial ground. North Wind, Inc. (North Wind) pursued a hot demonstration to characterize six buried silos at the 118-K-1 Burial Ground. Process knowledge and historical data indicated one or more silos could contain high concentrations of $^{60}$Co. The silos are 10-feet in diameter and 25-feet deep; this presented an opportunity to demonstrate the MDP system on waste disposal units other than VPUs. The objective was to complete hot demonstration of the MDP, demonstrate MDP performance on a much larger geometry, and provide characterization data to support 118-K-1 remedial action decisions. This hot demonstration confirmed the ability of the MDP system to operate in a field environment and identified and quantified radionuclides at the burial ground.

In 2010, the MDP system was used again to determine the estimated exposure rates, isotopic concentrations, and bounding radionuclide inventories of the 618-10 VPUs and at selected 618-10 trench locations. The 618-10 Burial Ground consisted of 12 trenches and 94 VPUs. A total of 94 VPUs and 100 trench locations were characterized with the MDP system. The MDP system provided screening level preliminary data based on direct measurements, modeling, and scaling to estimate radionuclide inventories in the burial ground.

MDP deployment within the 618-11 Burial Ground was considered to be a production deployment of an already proven turn-key system. In other words, no further technical development was needed prior to deployment at 618-11 as the technology had been deployed twice previously with successful results, or when compared to previously collected data at 618-10.

The 618-11 Burial Ground is considered a sister site to 618-10 and received similar types of waste from the 325 Radiochemistry Laboratory and 327 Radiometallurgy Laboratory. Prior to deploying the MDP at 618-11 improvements to the system were made based on lessons learned

from the 618-10 NIC campaign. These lessons learned, and the resulting improvements, addressed the robustness and reliability of the system and included upgraded umbilical connectors, field hardening of the MDP detectors, and improved hardware for conducting daily source checks and documenting MDP system operation. Implementing the system improvements stemming from 618-10 lessons learned resulted in greatly improved reliability of the MDP system and as a result there was no down-time or delays associated with operation of the MDP in the field at 618-11.

## 2.0 DESCRIPTION OF THE MDP SYSTEM

The MDP system is configured with five standard commercial radiation detector modules, including a GM (AMP-100) gross rate meter, two gamma spectroscopy detectors, two neutron detectors and the associated vendor provided software utilizing an integrated approach for data acquisition, analysis, and archiving. The scope of the *in-situ* radionuclide characterization at the 618-11 Burial Ground involved only gross gamma data collection, as required by the SAP, DOE/RL-2011-02, Revision 0. Therefore, only the AMP-100 detector of the MDP system was needed to obtain the required data. The standard commercial detector configured for 618-11 met the requirements as described in DOE/RL-2011-02. The detector system is designed to be deployed in a CPT having 2 ¾- inch O.D. and 2 ¼- inch I.D. nominal dimensions. Two CPTs were installed approximately 6-inches from the outer edge of, and equally spaced around, the perimeter of each VPU (approximately 180° apart, one on each side of each VPU) to a target depth of 6-feet below each VPU.

Figure 2 illustrates the basic configuration of the CPTs installed around each VPU and shows the CPTs installed in a row of VPUs at the 618-11 Burial Ground.

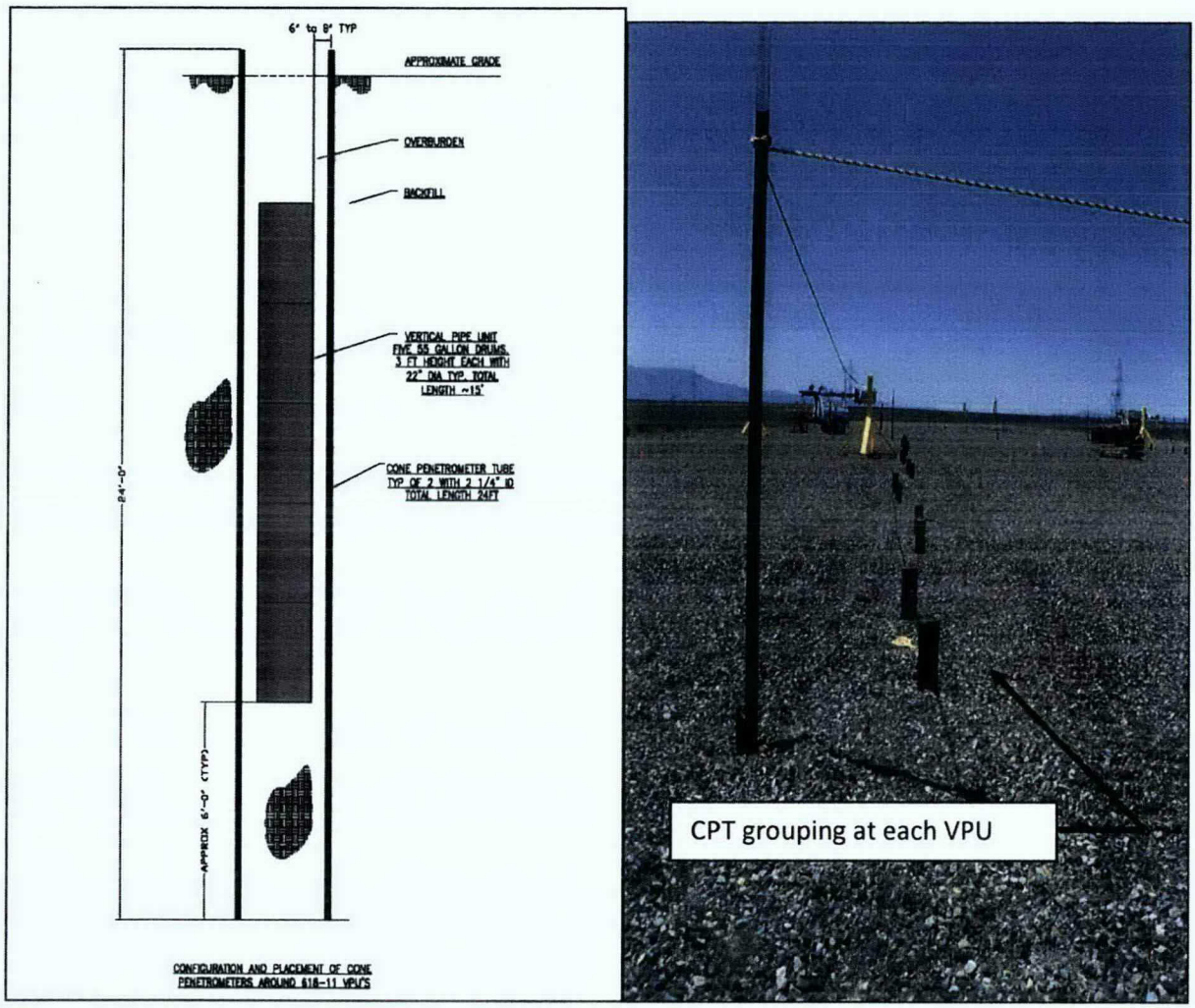



**Figure 2 - Configuration and Placement of Cone Penetrometers Around 618-11 VPUs**

## 2.1 Hardware

Figure 3 shows the detector configuration of the MDP and Figure 4 shows the actual detector components within the protective tube.

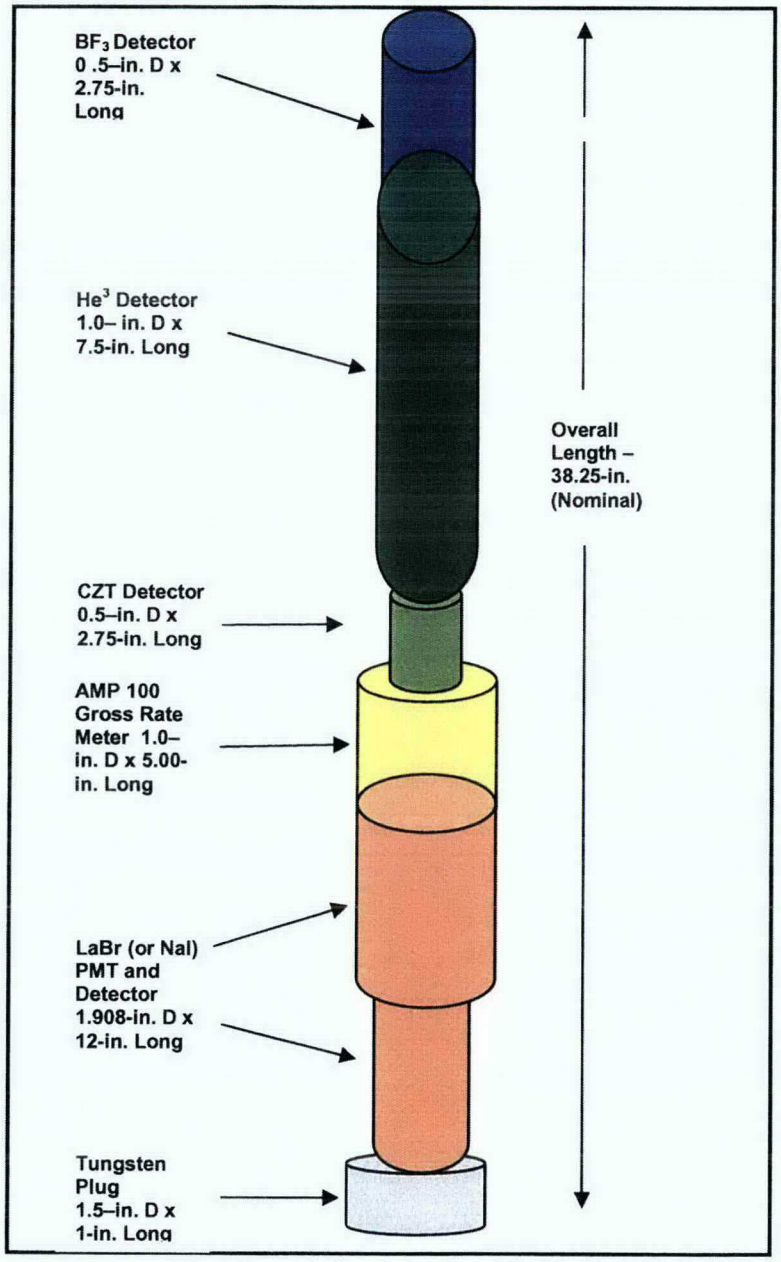



**Figure 3 - Multi-Detector Probe Detector Configuration**

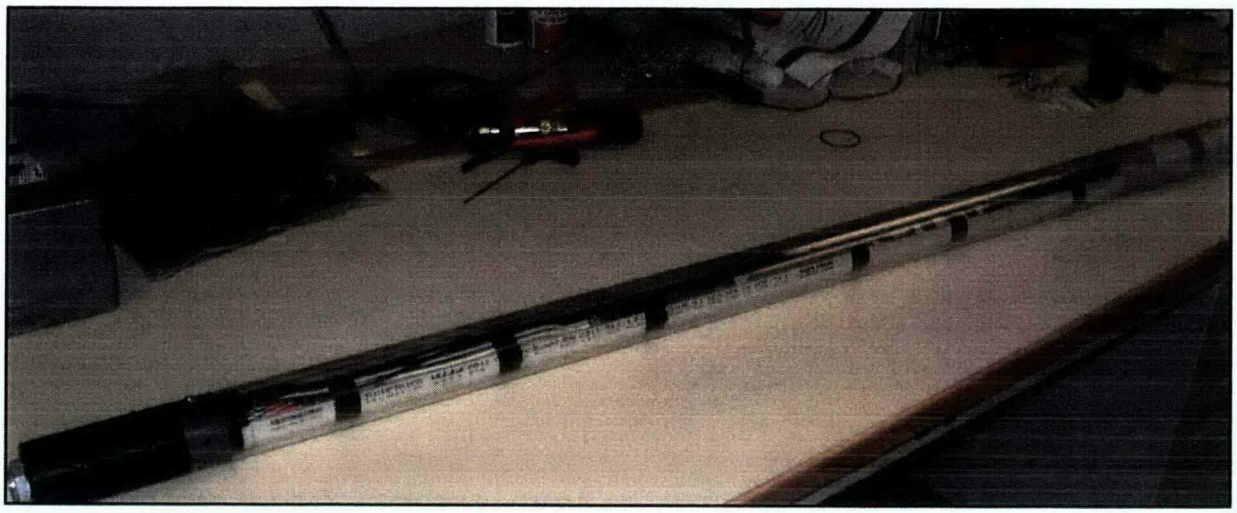


**Figure 4 - MDP Probe with Detectors**

**Table 1 - SAP DOE/RL-2011-02 Radiological Analytical Performance Requirements**

| Data Type | Analyte | Analytical Method | Detection Limit Goals[a] |
|---|---|---|---|
| ***Performance Requirements for Direct Field Measurements*** | | | |
| Rad | Gross beta/gamma | Geiger Mueller | 0.3 mR/hr to 750 R/hr |
| [a] SAP, Section 2.1, requires a minimum detection capability of 5mR/hr. | | | |

The general characteristics of the MDP gross gamma detector are described below:

*Gross Gamma Activity* – An energy compensated Geiger-Mueller (GM) detector, the AMP-100 has been included in the detector string to replace the smaller detector used in the prototype. This detector has a nominal operational range of 10 mR/hr to about 1000 R/hr but the calibrated range was adjusted to 0.3 mR/hr to 750 R/hr.

Figure 5 shows a schematic of the MDP hardware. The components illustrated in light gray remained part of the MDP system as deployed at 618-11. Data was collected by these detectors as part of the normal operation of the system. However, only data obtained by the AMP-100 (highlighted component) was logged and controlled for 618-11 NIC.

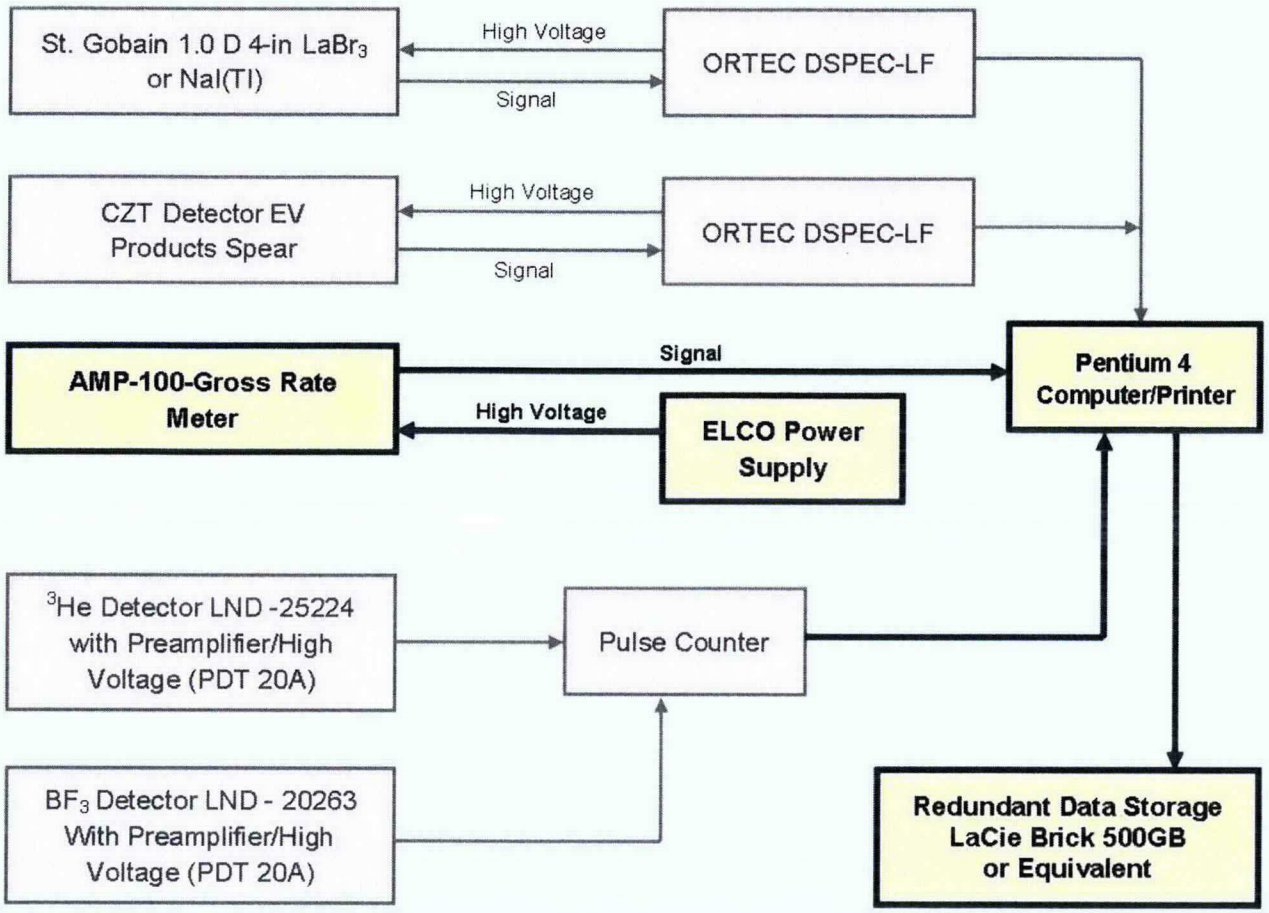



**Figure 5 - MDP AMP-100 and Data Acquisition Hardware**

**Note:** *All MDP configured elements are shown, but only AMP-100 elements are prominently displayed as the only AMP-100 data contractually required.*

## 2.2 Software

The MDP system was modeled after similar systems (and applications) developed for use at the INL. The MDP system relies on a number of commercial off-the-shelf software applications integrated to provide a fully automated data acquisition and analysis system. The primary software integrator is the LabView 8 code. This code functions as the system interface and control of the other software elements including both data acquisition and analysis.

Figure 6 illustrates the MDP data acquisition and process functional schematic. The data acquisition systems illustrated in light gray remained part of the MDP system as deployed at 618-11. The acquisition systems operated as part of the normal function of the system. However, only data acquired by the AMP-100 (highlighted GM detector) was logged and controlled for 618-11 NIC.

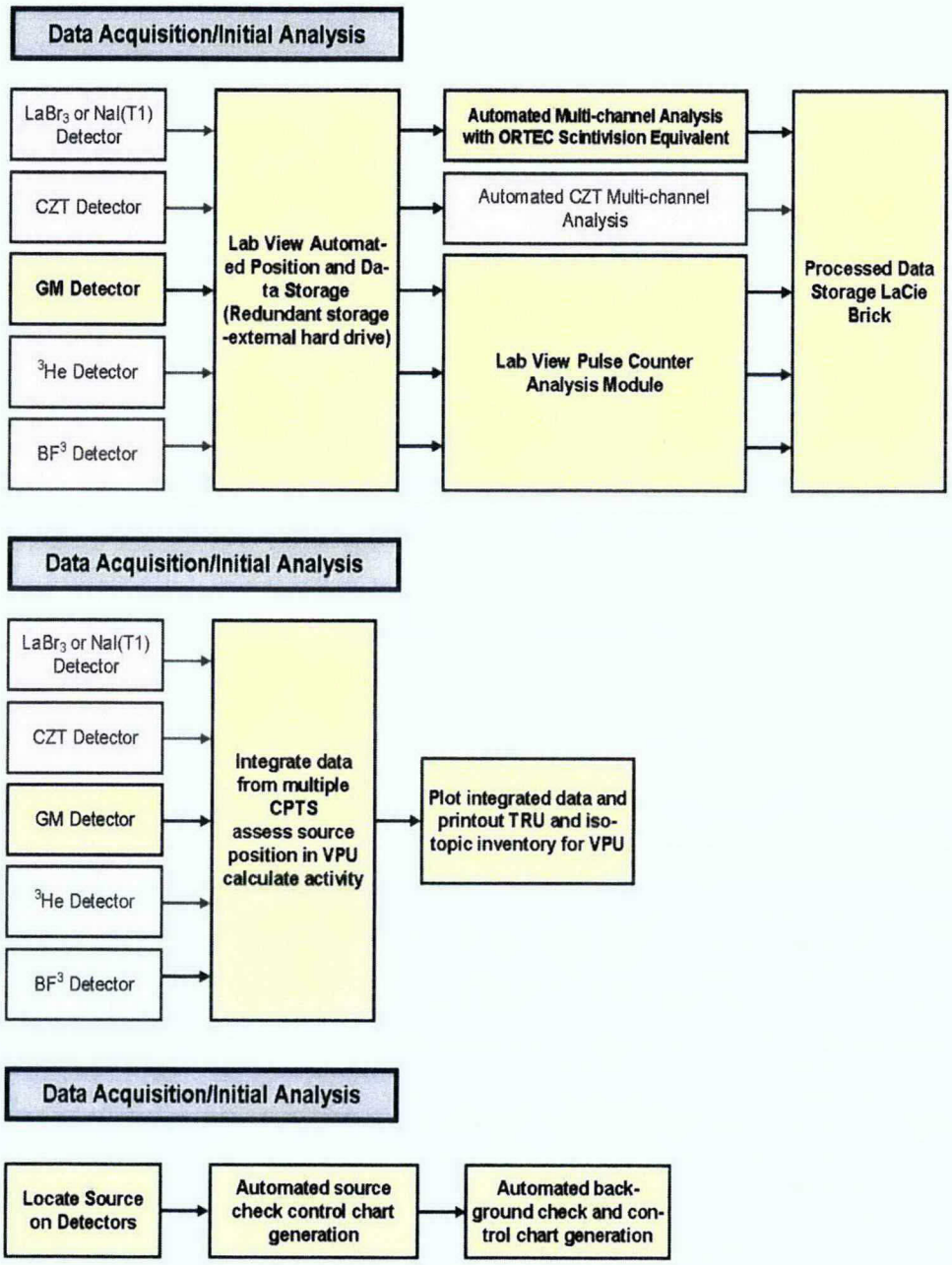



**Figure 6 – MDP AMP-100 Data Acquisition and Processes**

**Note:** *All MDP configured elements are shown, but only AMP-100 elements are prominently displayed as the only AMP-100 data contractually required.*

### 2.2.1 Data Storage

The MDP system utilizes a redundant storage approach ensuring no data is lost in the event of a hard drive failure on the primary computer. An embedded LabView software module provides automated backup to an external hard drive. The primary elements backed up include all acquired spectra, analysis results, and intermediate data. Files from the external hard drive are downloaded daily and transferred to the Subject Matter Expert (SME) for data review and processing.

## 2.3 Field Operations

Characterization activities started with a detailed geophysical survey of the VPU areas, utilizing a working grid laid out by a civil surveyor. Survey methods included a reconnaissance level magnetic survey, a high resolution magnetic survey, Time Domain Electromagnetic Induction survey, and a Ground Penetrating Radar (GPR) survey. The geophysic work activities were conducted in accordance with North Wind Work Instruction PWI-10473-001, *618-11 Burial Ground VPU & Caisson Delineation.*

Based on the geophysical survey measurement results, a detailed list of VPU center point coordinates was generated for all 50 VPUs, converted to Washington State coordinates, and staked by a Washington State licensed civil surveyor. These locations were scaled from WCH-furnished drawings and staked. GPR data was used to determine the depth of earth cover over each VPU, allowing an accurate determination of total CPT lengths needed for each location.

In accordance with North Wind Work Instruction PWI-10473-003, *618-11 Burial Ground Probehole Installation,* circular templates were used to locate the CPT installation points; two CPTs per VPU, equally spaced around the template circumference; nominally spaced 6-inches outside the circumference of the VPU; and tailored to the diameter of each VPU. The CPTs were installed using direct push technology methods. Initial pushes were made to a depth of 8-feet at the VPU. At this point, an inclinometer was used to verify vertical orientation of the CPT using North Wind Work Instruction, PWI-10473-004, *618-11 Burial Ground Probehole Inclinometer Relative Zero Field Calibration and Operation.* After verifying vertical orientation, CPTs were driven to a target depth of approximately 6-feet below each VPU. Nominal depth for each CPT was approximately 24-feet below ground surface.

Vertical orientation was measured by a digital carpenter's level calibrated and certified by the manufacturer. Prior to deploying the MDPs, a go/no-go gauge (fabricated to the same dimensions as the MDP) was inserted to the full depth of each CPT to verify the tubes were free of kinks or obstacles. A secondary function of the go/no-go gauge was to check for potential contamination inside the tubes.

MDP field operations were conducted using North Wind Work Instruction PWI-10473-005, *618-11 Burial Ground Multi-Detector Probe Field Operations.* One MDP system was used for characterization of the 618-11 VPUs with a spare MDP system available. The MDP was operated by the MDP Field Engineer and a MDP Jr. Engineer. The Jr. Engineer was responsible for deploying the MDP detector probe in the CPTs. Following system startup and field source checks, the MDP detectors were inserted to the full depth of each CPT and the starting depth was entered by the operator into the MDP console. Measurements were then performed for a three minute count time with the elevation being increased by one foot between measurements.

Once all work was completed the As-Built locations for each CPT were verified by a licensed Washington State Professional Land surveyor. Exact coordinates of the VPUs and CPT locations are confirmed and documented by Appendix D, 618-11 VPU As-Built Survey 618-11-003-001, Revision 0.

The SAP required each probe point to be driven to approximately 6-feet below the VPUs (approximately 24-feet) and if gamma logging activity showed elevated radiation existed at the

bottom of the probe point, additional lengths of CPTs would be driven. The lowest depth activity data for each VPU were reviewed with RL and the Environmental Protection Agency and determined additional CPTs were not required to be driven.

CPT 579 inserted around VPU 40 was determined to be contaminated during the go/no-go check after the CPT was driven to a depth of 24-feet. As a result, CPT 579 was not utilized to characterize VPU 40. VPU 40 data is based on the data obtained from CPT 578.

The results of the associated technical smear data collected from CPT 579 are as follows:

| Radionuclide | Activity (dpm/100 cm2) |
|---|---|
| Cs-137 | 360,000 |
| Am-241 | 33,700 |
| Eu-154 | 620 |
| Co-60 | 440 |

# 3.0 SYSTEM OPERABILITY PROCESS

System operability was confirmed using the MDP operations checklist in accordance with North Wind Work Instruction, PWI-10473-005, *618-11 Burial Ground Multi-Detector Probe Field Operations*.

This included initial AMP-100 calibration, system setup, startup, daily source response checks, operation, and shutdown activities.

## 3.1 Initial AMP-100 Calibration Check

A calibration verification measurement was performed for the AMP-100 detector used for the 618-11 measurements by the INL's Health Physics Instruments Laboratory and a certification document for the detector system was prepared. A copy of the certification is shown in Appendix A.

## 3.2 Daily Source Check Operability Verification

At the beginning and ending of each day, source checks were performed by the MDP operators using a $^{152}$Eu radioactive source (approximately 10 microcuries) producing multiple gamma rays for characterizing the general operational characteristics of the MDP gamma detector. Sources were procured with certifications traceable to the National Institute of Standards and Technology (NIST) and controlled by WCH. Source checks assessed system operability for the AMP-100 detector.

The twice daily checks provided indication of system operability. Daily source check data were logged in the MDP computer and reviewed by the SME to assess whether the data obtained were suitable for subsequent analysis. The AMP-100 source check data are listed in Appendix A and the results are shown in Figure 7. Figure 7 shows the MDP GRM data for all dates where VPU measurements were performed.

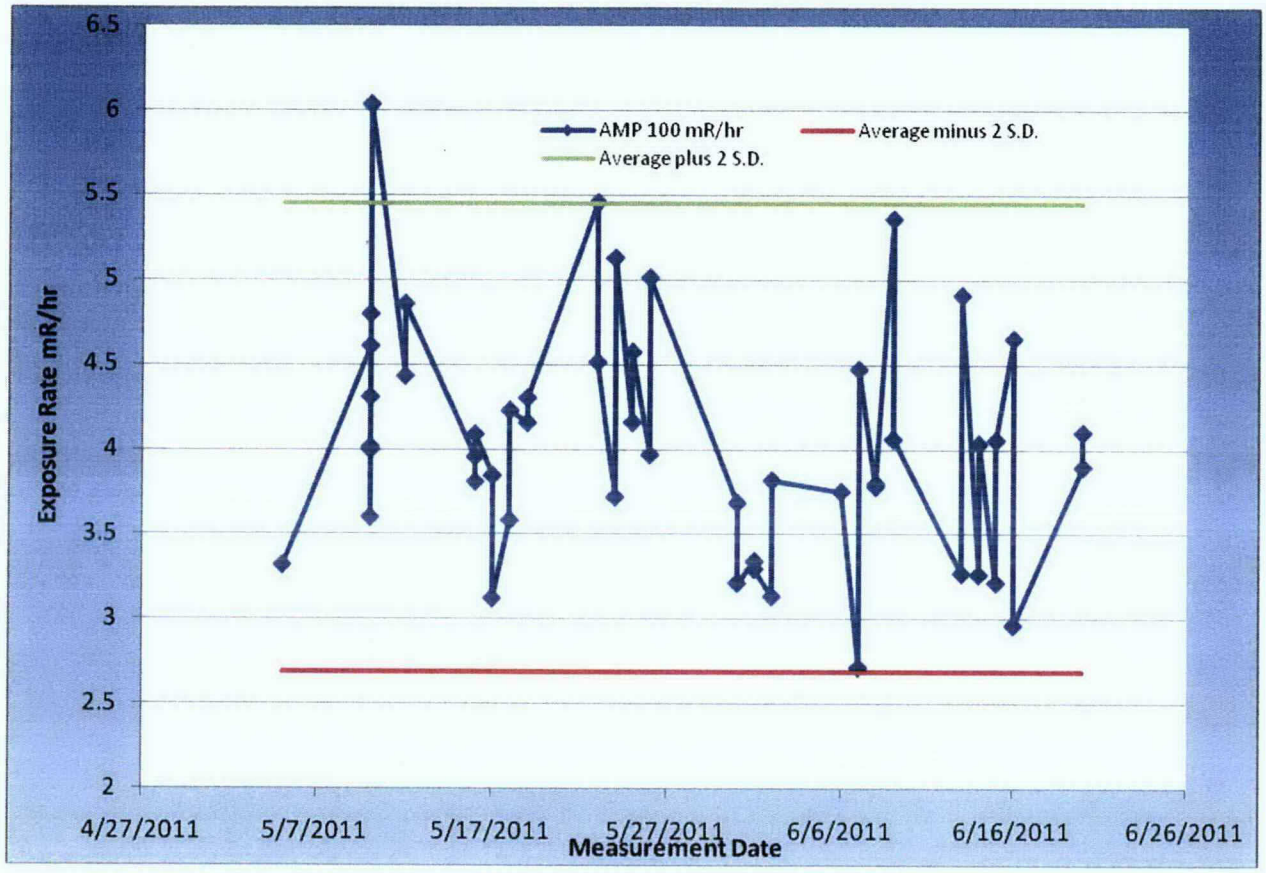



**Figure 7 – AMP-100 Check Source Data with 2 Standard Deviation Upper and Lower Bounds**

## 3.3 MDP Data Analysis and Results

Analysis of the MDP data for 618-11 provides exposure rates, the distribution of activity along the length of the VPUs and the lowest depth at which activity was detectable using the AMP-100 data. Calibration data for the AMP-100 demonstrated measurement sensitivities to 0.3 mR/hr. Gross rate data obtained with the AMP-100 detector measured activities as low as 0.01 mR/hr at 618-11. Although, these measurements are below the calibrated limits of the detector the intrinsic characteristic of the AMP-100 suggest that the detector response would be linear to lower ranges such as 0.01 mR/hr. However, it should be noted that there is greater uncertainty associated with any measurement recorded below 0.3 mR/hr. These data are reported in Appendix B and discussed in Section 4.0.

# 4.0 DATA SUMMARY

This section presents the MDP AMP-100 measurement results for the 50 VPUs within the 618-11 Burial Ground. Table 2 lists a summary description of the maximum gross rates measured, their depths, and the maximum depth at which activity was measurable using the AMP-100. Appendix B lists the AMP-100 gross rate data for the VPUs. The data listed in Appendix B includes the MDP system used, the VPU identifier, CPT location, depth, and the gross exposure rate in mR/hr. In all cases, CPTs were orientated north south with CPT 1 located on the West and CPT 2 positioned on the East of the VPU.

Examination of the data indicates the maximum radiation field measured was 8.9 R/hr. There were 18 VPUs where the maximum radiation field was below100 mR/hr, 18 VPUs where the radiation field was between 100 and 1000 mR/hr, and 14 VPUs with maximum radiation fields greater than 1 R/hr.

**Table 2 - VPU Summary Data**

| VPU | Date | Maximum Gross Rate Location (CPT#/Depth [ft]) | Maximum Gross Rate (mR/hr) | Lowest Depth (LD) Activity Detected (ft) In CPT | Exposure Rate at LD (mR/hr) Exposure rates below 0.3 mR/hr are in *italics* |
|---|---|---|---|---|---|
| 1 | 5/12/11 | 2/-16.69 | 306 | CPT 1 – 21.69<br>CPT 2 – 21.69 | CPT 1 – *0.14*<br>CPT 2 – *0.17* |
| 2 | 5/12/11 | 1/-14.69 | 2439 | 1 – 22.69<br>2 – 22.69 | *1 – 0.16*<br>*2 – 0.06* |
| 3 | 5/16/11 | 2/-10.69 | 20.4 | 1 – 22.69<br>2 – 19.69 | *1 – 0.15*<br>2 – 5.0 |
| 4 | 5/16/11 | 2/-8.69 | 456 | 1 – 22.69<br>2 – 20.69 | 1 – *0.15*<br>2 – *0.03* |
| 5 | 5/17/11 | 2/-17.69 | 268.4 | 1 – 21.69<br>2 – 20.69 | 1 – *0.02*<br>2 – *0.03* |
| 6 | 5/17/11 | 2/-10.69 | 190.3 | 1 – 21.69<br>2 – 20.69 | 1 – *0.04*<br>2 – *0.09* |
| 7 | 5/18/11 | 2/-15.69 | 79.16 | 1 – 21.69<br>2 – 21.69 | 1 – *0.07*<br>2 – 6.05 |
| 8 | 5/18/11 | 1/-13.69 | 1049 | 1 – 20.69<br>2 – 20.69 | 1 – *0.04*<br>2 – *0.17* |
| 9 | 5/18/11 | 1/-15.69 | 211.8 | 1 – 21.69<br>2 – 20.69 | 1 – *0.06*<br>2 – *0.02* |
| 10 | 5/19/11 | 1/-17.69 | 523.3 | 1 – 22.69<br>2 – 19.69 | 1 – *0.14*<br>2 – 0.94 |
| 11 | 5/19/11 | 2/-13.69 | 56.4 | 1 – 20.69<br>2 – 18.69 | 1 – *0.15*<br>2 – 1.45 |
| 12 | 5/23/11 | 2/-14.69 | 321.9 | 1 – 21.69<br>2 – 20.69 | 1 – *0.06*<br>2 – *0.09* |
| 13 | 5/23/11 | 1/-17.69 | 23.42 | 1 – 19.69<br>2 – 21.69 | 1 – 1.06<br>2 – 0.34 |
| 14 | 5/23-24/11 | 2/-15.69 | 203.8 | 1 – 22.69<br>2 – 21.69 | 1 – *0.14*<br>2 – *0.04* |
| 15 | 5/24/11 | 1/-12.69 | 273.9 | 1 – 21.69<br>2 – 22.69 | 1 – *0.17*<br>2 – *0.08* |
| 16 | 5/24/11 | 2/-16.69 | 110.1 | 1 – 22.69<br>2 – 22.69 | 1 – *0.29*<br>2 – *0.03* |
| 17 | 5/25/11 | 2/-14.69 | 1095 | 1 – 22.69<br>2 – 18.69 | 1 – *0.12*<br>2 – 4.02 |
| 18 | 5/25/11 | 2/-15.69 | 1298 | 1 – 22.69<br>2 – 22.69 | 1 – *0.04*<br>2 – *0.11* |
| 19 | 5/25/11 | 2/-16.69 | 18.23 | 1 – 19.69<br>2 – 22.69 | 1 – *0.2*<br>2 – *0.06* |
| 20 | 5/25-26/11 | 2/-13.69 | 73.7 | 1 – 21.69<br>2 – 22.69 | 1 – *0.18*<br>2 – *0.02* |
| 21 | 6/16/11 | 2/-10.69 | 5.41 | 1 – 21.69<br>2 – 22.69 | 1 – *0.04*<br>2 – 0.3 |
| 22 | 6/16/11 | 1/-18.69 | 728.1 | 1 – 22.69<br>2 – 22.69 | 1 – *0.12*<br>2 – *0.03* |

| VPU | Date | Maximum Gross Rate Location (CPT#/Depth [ft]) | Maximum Gross Rate (mR/hr) | Lowest Depth (LD) Activity Detected (ft) In CPT | Exposure Rate at LD (mR/hr) Exposure rates below 0.3 mR/hr are in *italics* |
|---|---|---|---|---|---|
| 23 | 6/16/11 | 2/-16.69 | 1985 | 1 – 20.69<br>2 – 22.69 | 1 – *0.27*<br>2 – *0.15* |
| 24 | 6/15/11 | 1/-12.69 | 18.26 | 1 – 21.69<br>2 – 21.69 | 1 – *0.03*<br>2 – *0.01* |
| 25 | 6/15/11 | 2/-10.69 | 77.22 | 1 – 22.69<br>2 – 21.69 | 1 – *0.21*<br>2 – *0.17* |
| 26 | 6/15/11 | 2/-17.69 | 1217 | 1 – 21.69<br>2 – 22.69 | 1 – *0.22*<br>2 – *0.01* |
| 27 | 6/14/11 | 2/-17.69 | 40.11 | 1 – 19.69<br>2 – 22.69 | 1 – *0.01*<br>2 – *0.06* |
| 28 | 6/14/11 | 2/-11.69 | 0.23 | 1 – 19.69<br>2 – 19.69 | 1 – *0.03*<br>2 – *0.04* |
| 29 | 6/14/11 | 1/-5.69 | 0.35 | 1 – 17.69<br>2 – 20.69 | 1 – *0.24*<br>2 – *0.02* |
| 30 | 6/13/11 | 2/-15.69 | 345.4 | 1 – 22.69<br>2 – 22.69 | 1 – *0.01*<br>2 – *0.04* |
| 31 | 6/6/11 | 1/-15.69 | 2073 | 1 – 22.69<br>2 – 20.69 | 1 – *0.05*<br>2 – *0.04* |
| 32 | 6/6/11 | 2/-16.69 | 66 | 1 – 22.69<br>2 – 21.69 | 1 – *0.15*<br>2 – *0.02* |
| 33 | 6/2/11 | 2/-17.69 | 435 | 1 – 22.69<br>2 – 22.69 | 1 – *0.09*<br>2 – *0.01* |
| 34 | 6/2/11 | 1/-12.69 | 42 | 1 – 17.69<br>2 – 19.69 | 1 – 2.72<br>2 – *0.08* |
| 35 | 6/2/11 | 1/-14.69 | 101.2 | 1 – 19.69<br>2 – 19.69 | 1 – *0.22*<br>2 – 0.38 |
| 36 | 6/1/11 | 2/-7.69 | 26.85 | 1 – 21.69<br>2 – 21.69 | 1 – *0.06*<br>2 – *0.09* |
| 37 | 6/1/11 | 2/-10.69 | 1935 | 1 – 22.69<br>2 – 22.69 | 1 – *0.39*<br>2 – 0.16 |
| 38 | 5/31/11 | 1/-16.69 | 2169 | 1 – 20.69<br>2 – 22.69 | 1 – *0.07*<br>2 – *0.1* |
| 39 | 5/31/11 | 2/-12.69 | 21.27 | 1 – 20.69<br>2 – 20.69 | 1 – *0.1*<br>2 – *0.22* |
| 40 (CPT1) | 6/20/11 | 1/-9.69 | 0.76 | 1 – 21.69 | 1 – *0.1* |
| 41 | 6/13/11 | 2/-11.69 | 33.7 | 1 – 21.69<br>2 – 21.69 | 1 – *0.07*<br>2 – *0.15* |
| 42 | 6/09/11 | 2/-13.69 | 604.9 | 1 – 19.69<br>2 – 19.69 | 1 – 0.3<br>2 – *0.07* |
| 43 | 6/09/11 | 2/-15.69 | 2270 | 1 – 22.69<br>2 – 19.69 | 1 – *0.2*<br>2 – *0.04* |
| 44 | 6/9/11 | 2/-11.69 | 8909 | 1 – 22.69<br>2 – 22.69 | 1 – *0.15*<br>2 – *0.02* |

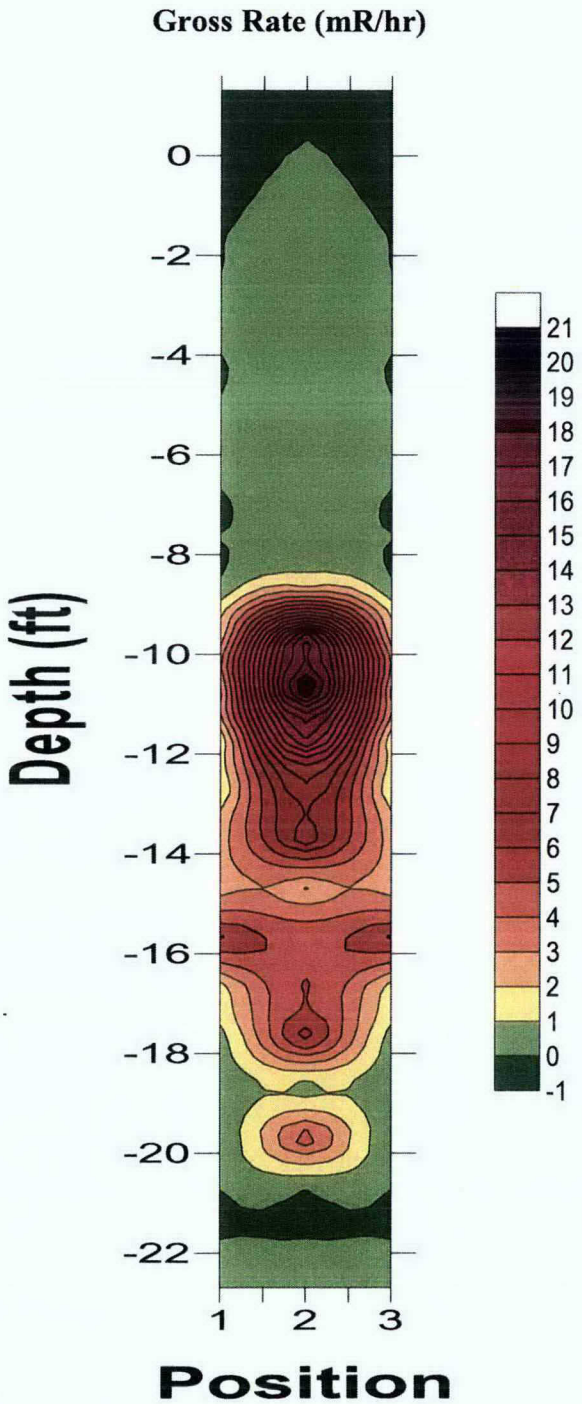
| VPU | Date | Maximum Gross Rate Location (CPT#/Depth [ft]) | Maximum Gross Rate (mR/hr) | Lowest Depth (LD) Activity Detected (ft) In CPT | Exposure Rate at LD (mR/hr) Exposure rates below 0.3 mR/hr are in *italics* |
|---|---|---|---|---|---|
| 45 | 6/8/11 | 2/-15.69 | 1781 | 1 – 19.69<br>2 – 22.69 | 1 – 0.38<br>2 – *0.04* |
| 46 | 6/8/11 | 2/-10.69 | 3489 | 1 – 20.69<br>2 – 21.69 | 1 – *0.1*<br>2 – *0.03* |
| 47 | 6/8/11 | 2/-16.69 | 3649 | 1 – 20.69<br>2 – 22.69 | 1 – *0.2*<br>2 – *0.19* |
| 48 | 6/7/11 | 2/-7.69 | 490 | 1 – 20.69<br>2 – 22.69 | 1 – *0.13*<br>2 – *0.01* |
| 49 | 6/7/11 | 2/-16.69 | 237 | 1 – 19.69<br>2 – 22.69 | 1 – *0.14*<br>2 – *0.02* |
| 50 | 6/7/11 | 2/-14.69 | 103 | 1 – 21.69<br>2 – 21.69 | 1 – *0.03*<br>2 – *0.18* |

Figures 8-13 are summary figures showing the distribution of activity in six selected VPUs ranging from low to high activity. The position locations (1, 2 and 3) correspond to 0°, 180°, and 360° providing a 3D perspective of the activity distribution within a VPU. Position 1 represents CPT1, position 2 represents CPT, and position 3 at 360° corresponds to CPT1 at 0°. This nomenclature allows a better graphic representation of the data. Typically, the higher activities are generally located near the bottom of the VPUs. The activity distribution plots for all VPUs are shown in Appendix C.

## 5.0 REFERENCES

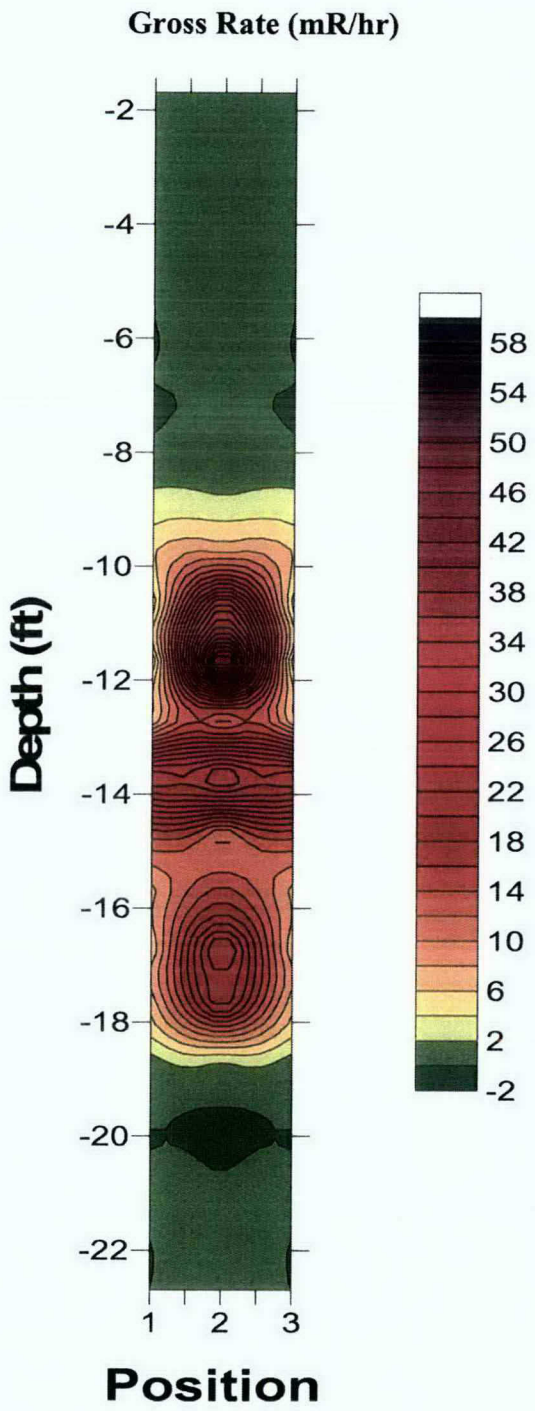

1. Contract DE-AC09-03NT42006 for the U.S. Department of Energy-HQ project, In-situ TRU Waste Delineation and Waste Removal at Hanford 618-10 and 618-11 Burial Grounds at the 118-K Site
2. DOE/RL-2011-02, Revision 0, *Sampling and Analysis Plan for Characterization of the 618-11 Burial Ground*
3. PWI-10473-001, *618-11 Burial Ground VPU & Caisson Delineation*
4. PWI-10473-003, *618-11 Burial Ground Probehole Installation*
5. PWI-10473-004, *618-11 Burial Ground Probehole Inclinometer Relative Zero Field Calibration and Operation*
6. PWI-10473-005, *618-11 Burial Ground Multi-Detector Probe Field Operations*

**Figure 8 - VPU 3 Activity Distribution**



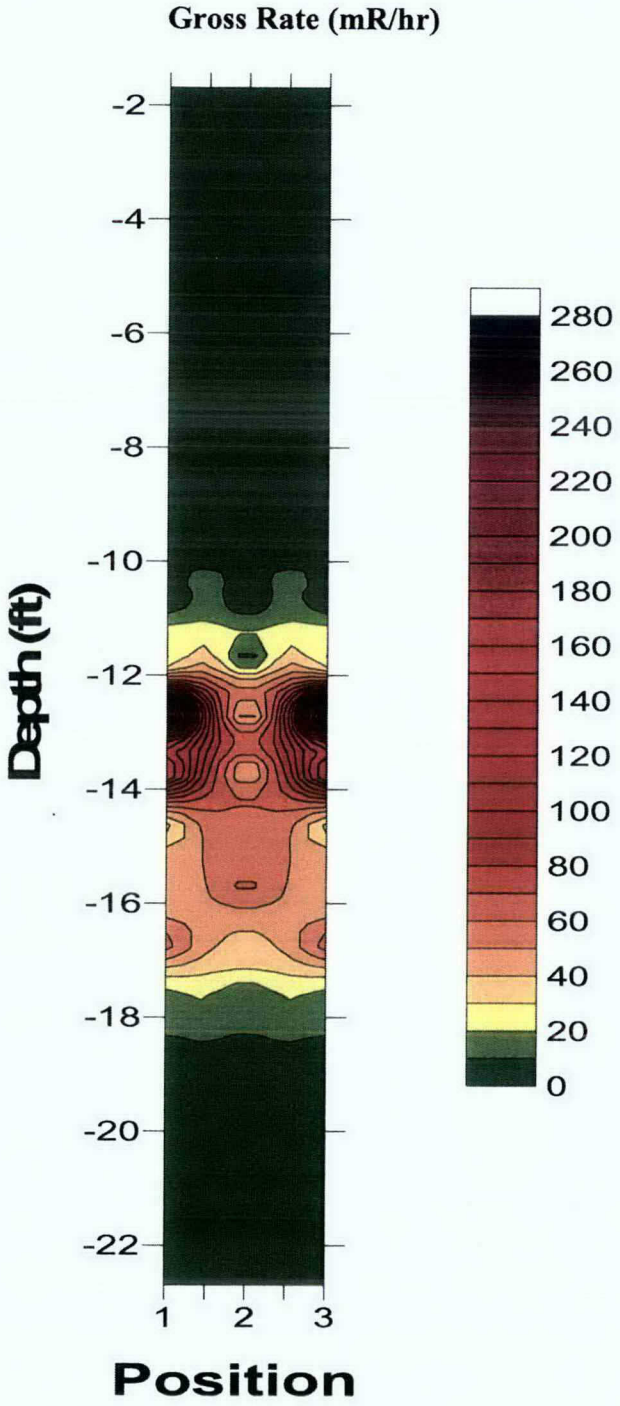

**Maximum Gross Rate: 20.4 mR/hr**

**Figure 9 - VPU 11 Activity Distribution**



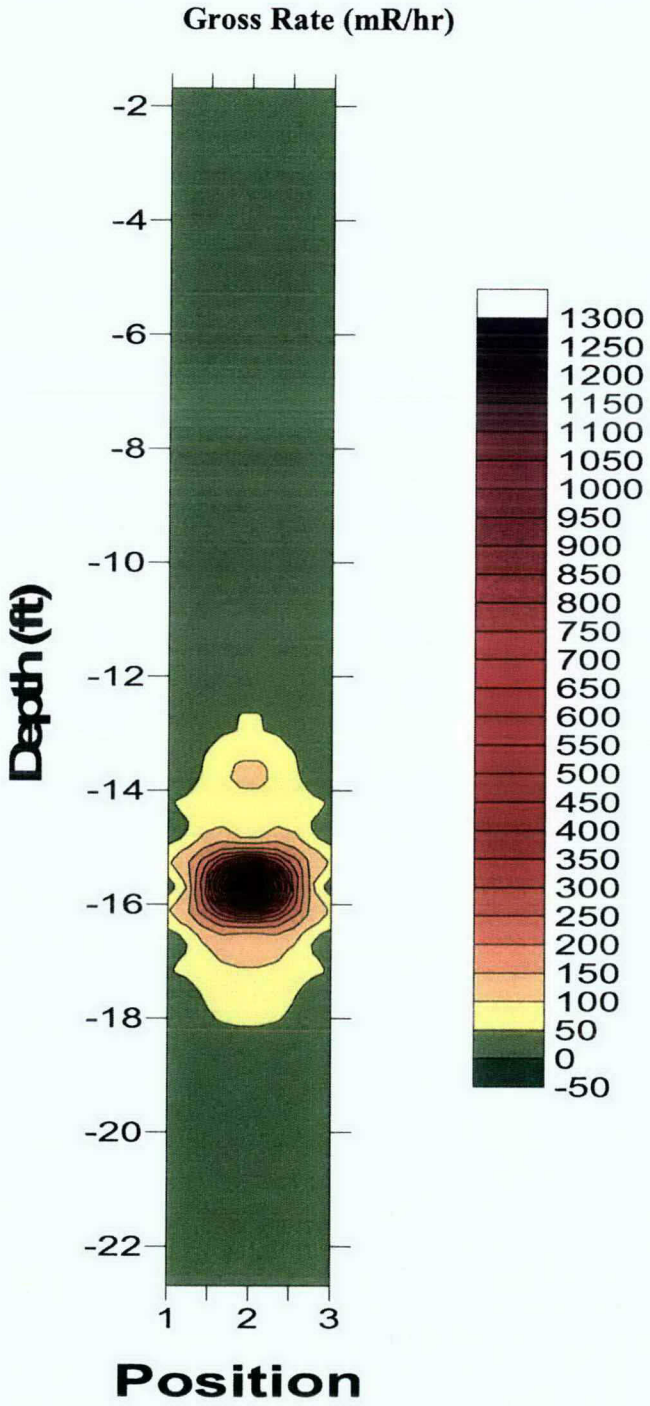

**Maximum Gross Rate: 56.4 mR/hr**

**Figure 10 - VPU 15 Activity Distribution**



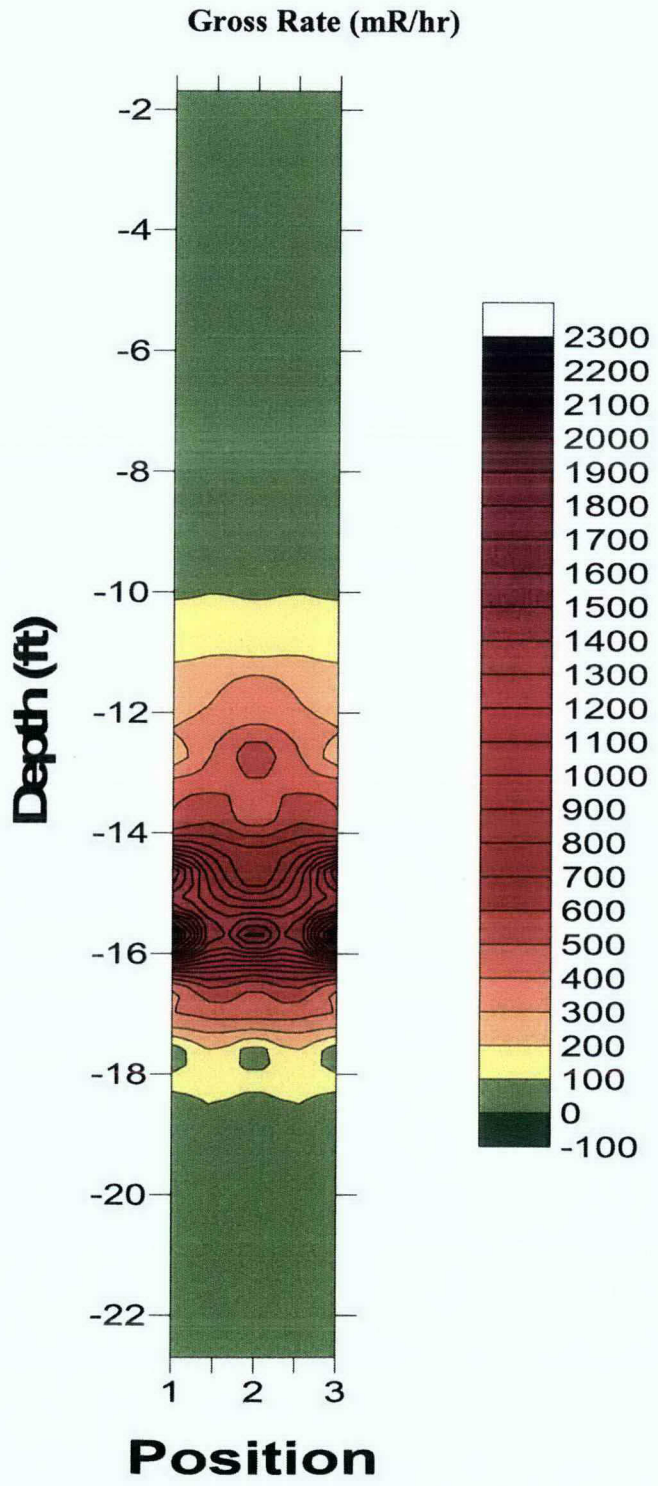

**Maximum Gross Rate: 274 mR/hr**

**Figure 11 - VPU 18 Activity Distribution**



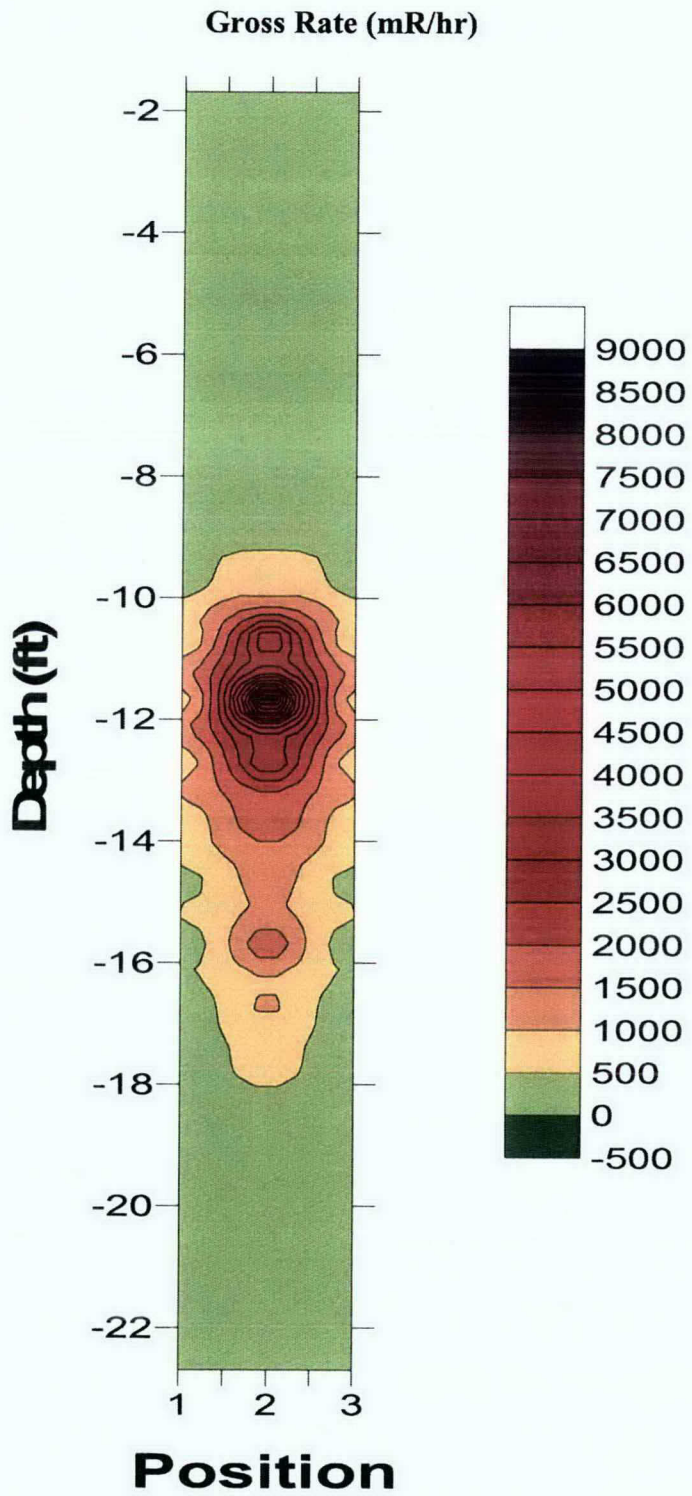

**Maximum Gross Rate: 1298 mR/hr**

**Figure 12 - VPU 43 Activity Distribution**




**Maximum Gross Rate: 2270 mR/hr**

**Figure 13 - VPU 44 Activity Distribution**




**Maximum Gross Rate: 8909 mR/hr**

# APPENDICES

**Appendix A** **MDP AMP-100 Source Check Data**

**Appendix B** **MDP AMP-100 618-11 Data**

**Appendix C** **MDP AMP-100Activity Distribution Plots**

**Appendix D** **As Built Civil Survey Drawing**

# Appendix A
# MGP AMP-100 Source Check Data and Calibration Certificates

| Date | Time | Exposure (mR/hr) |
|---|---|---|
| 5/5/2011 | 9:53:10 | 3.317 |
| 5/10/2011 | 8:53:17 | 4.609 |
| 5/10/2011 | 9:3:34 | 5.091 |
| 5/10/2011 | 9:12:3 | 5.519 |
| 5/10/2011 | 9:22:18 | 4.797 |
| 5/10/2011 | 9:34:9 | 4.308 |
| 5/10/2011 | 9:43:43 | 4.014 |
| 5/10/2011 | 9:57:24 | 3.997 |
| 5/10/2011 | 10:8:51 | 3.599 |
| 5/10/2011 | 10:18:52 | 6.036 |
| 5/12/2011 | 8:42:31 | 4.432 |
| 5/12/2011 | 15:26:8 | 4.858 |
| 5/16/2011 | 8:38:29 | 3.956 |
| 5/16/2011 | 8:46:54 | 3.809 |
| 5/16/2011 | 15:42:19 | 4.089 |
| 5/17/2011 | 7:24:58 | 3.845 |
| 5/17/2011 | 13:53:58 | 3.121 |
| 5/18/2011 | 7:33:13 | 3.582 |
| 5/18/2011 | 15:40:42 | 4.229 |
| 5/19/2011 | 7:26:18 | 4.157 |
| 5/19/2011 | 15:24:16 | 4.303 |
| 5/23/2011 | 8:12:15 | 5.457 |
| 5/23/2011 | 15:33:25 | 4.515 |
| 5/24/2011 | 7:4:34 | 3.719 |
| 5/24/2011 | 15:50:24 | 5.129 |
| 5/25/2011 | 7:23:23 | 4.16 |
| 5/25/2011 | 15:39:28 | 4.574 |
| 5/26/2011 | 7:24:48 | 3.969 |
| 5/26/2011 | 11:58:33 | 5.012 |
| 5/31/2011 | 8:43:26 | 3.685 |
| 5/31/2011 | 15:49:30 | 3.213 |
| 6/1/2011 | 7:9:31 | 3.341 |
| 6/1/2011 | 15:22:53 | 3.295 |
| 6/2/2011 | 7:22:42 | 3.134 |
| 6/2/2011 | 14:59:33 | 3.818 |
| 6/6/2011 | 7:25:31 | 3.751 |
| 6/7/2011 | 15:0:9 | 2.714 |
| 6/7/2011 | 7:21:17 | 4.472 |
| 6/8/2011 | 15:43:52 | 3.781 |
| 6/8/2011 | 7:24:46 | 3.799 |
| 6/9/2011 | 15:44:15 | 5.36 |
| 6/9/2011 | 7:50:28 | 4.061 |
| 6/13/2011 | 15:40:53 | 3.269 |
| 6/13/2011 | 7:24:47 | 4.909 |
| 6/14/2011 | 16:5:43 | 3.262 |
| 6/14/2011 | 7:0:13 | 4.033 |
| 6/15/2011 | 15:50:15 | 3.214 |
| 6/15/2011 | 7:2:47 | 4.055 |
| 6/16/2011 | 15:44:36 | 4.654 |
| 6/16/2011 | 7:16:59 | 2.962 |
| 6/20/2011 | 15:33:59 | 3.896 |

| 6/20/2011 | 7:33:15 | 4.1 |
|---|---|---|

Frm-CWI-208A
03/31/2011
Rev. 01
Use with CWI-208

**MGP MODEL AMP-100**

Page 1 of 1

## *Record of Calibration*

| | | | |
|---|---|---|---|
| SERIAL NUMBER: 802492 | | ISSUED TO | RECEIVED DATE |
| MANUFACTURER: | MGP | OKERS | |
| INSTRUMENT MODEL: | AMP-100 | | UNIFORM FILE CODE |
| PROBE MODEL | 4-0021 | | |

***REPAIR/MAINTENANCE**

WORK PERFORMED: N/A

PARTS USED: 1 - 9v Battery

BATTERY: OK HIGH VOLTAGE: OK

*repair/maintenance reflects the previous calibration cycle

**CALIBRATION/AS FOUND INFORMATION**

| STANDARDS USED Instruction: Place a check in the parenthesis for the source(s) used | | EXPECTED CALIBRATION RESPONSE | CALIBRATION RESPONSE (Pass) / Fail | EXPECTED AS FOUND RESPONSE | AS FOUND RESPONSE Pass / Fail |
|---|---|---|---|---|---|
| (X) H-1Cs034 | | 20 mR/h (18-22) | 21 mR/h | 20 mR/h (16-24) | mR/h |
| ( ) H-1Cs036 | | 1000 mR/h (900-1100) | 1000 mR/h | 1000 mR/h (800-1200) | mR/h |
| ( ) H-1Cs037 | F1 | 10 R/h (9-11) | 9.3 R/h | 10 R/h (8-12) | R/h |
| (X) H-1Cs038 | F2 | 200 R/h (180 – 220) | 208 R/h | 200 R/h (160 – 240) | R/h |
| ( ) H-1Cs040 | F3 | 600 R/h (540 –660) | 634 R/h | 600 R/h (480 –720) | R/h |
| (X) H-1Cs041 | | 700 R/h (630 –770) | 770 R/h | 700 R/h (560 –840) | R/h |
| (X) H-1Cs045 | | | | | |
| ( ) H-1Cs046 | | | | | |
| ( ) | | | | | |

COMMENTS:

Temperature: 23 (19 – 24) °C | Humidity: 25 %RH (< 75%) | Barometric Pressure: 639 (615 – 660) mm Hg

MEASUREMENT UNCERTAINTY OF +/-10%, UNLESS OTHERWISE NOTED ( )

**SIGNATURE BLOCK**

INSTRUMENT TECHNICIAN: N/A REPAIR DATE: N/A

CALIBRATION TECHNICIAN: Laurel Hill CALIBRATION DATE:: 4-14-11

"AS FOUND" TECHNICIAN: "AS FOUND" DATE

VALIDATION / REVIEW: DATE:

***All Standards used in this calibration are traceable to NIST***

# Appendix B
# MGP AMP-100 618-11 Data

## Appendix Table B1 - VPU1

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-12-2011 | 09:05:52 | 1 | 1 | -22.69 | 0 |
| 1 | GM | 05-12-2011 | 09:10:55 | 1 | 1 | -21.69 | 0.14 |
| 1 | GM | 05-12-2011 | 09:14:16 | 1 | 1 | -20.69 | 0 |
| 1 | GM | 05-12-2011 | 09:18:43 | 1 | 1 | -19.69 | 0.08 |
| 1 | GM | 05-12-2011 | 09:22:16 | 1 | 1 | -18.69 | 0.8 |
| 1 | GM | 05-12-2011 | 09:25:35 | 1 | 1 | -17.69 | 12.99 |
| 1 | GM | 05-12-2011 | 09:29:09 | 1 | 1 | -16.69 | 43.98 |
| 1 | GM | 05-12-2011 | 09:33:11 | 1 | 1 | -15.69 | 27.38 |
| 1 | GM | 05-12-2011 | 09:36:27 | 1 | 1 | -14.69 | 2.43 |
| 1 | GM | 05-12-2011 | 09:40:01 | 1 | 1 | -13.69 | 0.46 |
| 1 | GM | 05-12-2011 | 09:43:16 | 1 | 1 | -12.69 | 0.11 |
| 1 | GM | 05-12-2011 | 09:46:31 | 1 | 1 | -11.69 | 0.02 |
| 1 | GM | 05-12-2011 | 09:49:49 | 1 | 1 | -10.69 | 0.08 |
| 1 | GM | 05-12-2011 | 09:53:09 | 1 | 1 | -9.69 | 0.05 |
| 1 | GM | 05-12-2011 | 09:56:23 | 1 | 1 | -8.69 | 0.05 |
| 1 | GM | 05-12-2011 | 09:59:53 | 1 | 1 | -7.69 | 0 |
| 1 | GM | 05-12-2011 | 10:03:07 | 1 | 1 | -6.69 | 0 |
| 1 | GM | 05-12-2011 | 10:06:23 | 1 | 1 | -5.69 | 0 |
| 1 | GM | 05-12-2011 | 10:09:39 | 1 | 1 | -4.69 | 0.01 |
| 1 | GM | 05-12-2011 | 10:12:55 | 1 | 1 | -3.69 | 0.07 |
| 1 | GM | 05-12-2011 | 10:16:11 | 1 | 1 | -2.69 | 0 |
| 1 | GM | 05-12-2011 | 10:19:36 | 1 | 1 | -1.69 | 0.01 |
| 1 | GM | 05-12-2011 | 10:23:49 | 1 | 2 | -22.69 | 0.01 |
| 1 | GM | 05-12-2011 | 10:27:05 | 1 | 2 | -21.69 | 0.17 |
| 1 | GM | 05-12-2011 | 10:30:23 | 1 | 2 | -20.69 | 0.01 |
| 1 | GM | 05-12-2011 | 10:33:41 | 1 | 2 | -19.69 | 0.41 |
| 1 | GM | 05-12-2011 | 10:37:05 | 1 | 2 | -18.69 | 6.58 |
| 1 | GM | 05-12-2011 | 10:40:30 | 1 | 2 | -17.69 | 82.69 |
| 1 | GM | 05-12-2011 | 10:44:23 | 1 | 2 | -16.69 | 306.7 |
| 1 | GM | 05-12-2011 | 10:47:45 | 1 | 2 | -15.69 | 117.3 |
| 1 | GM | 05-12-2011 | 11:59:58 | 1 | 2 | -14.69 | 7.02 |
| 1 | GM | 05-12-2011 | 12:03:25 | 1 | 2 | -13.69 | 1.12 |
| 1 | GM | 05-12-2011 | 12:06:57 | 1 | 2 | -12.69 | 0.37 |
| 1 | GM | 05-12-2011 | 12:10:15 | 1 | 2 | -11.69 | 0.21 |
| 1 | GM | 05-12-2011 | 12:13:56 | 1 | 2 | -10.69 | 0.04 |
| 1 | GM | 05-12-2011 | 12:17:15 | 1 | 2 | -9.69 | 0 |
| 1 | GM | 05-12-2011 | 12:20:34 | 1 | 2 | -8.69 | 0 |
| 1 | GM | 05-12-2011 | 12:23:53 | 1 | 2 | -7.69 | 0.09 |
| 1 | GM | 05-12-2011 | 12:27:10 | 1 | 2 | -6.69 | 0 |
| 1 | GM | 05-12-2011 | 12:30:29 | 1 | 2 | -5.69 | 0.02 |
| 1 | GM | 05-12-2011 | 12:33:54 | 1 | 2 | -4.69 | 0 |
| 1 | GM | 05-12-2011 | 12:37:10 | 1 | 2 | -3.69 | 0.08 |
| 1 | GM | 05-12-2011 | 12:40:31 | 1 | 2 | -2.69 | 0 |
| 1 | GM | 05-12-2011 | 12:45:48 | 1 | 2 | -1.69 | 0.16 |

# Appendix Table B 2 - VPU 2

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-12-2011 | 12:50:03 | 2 | 1 | -22.69 | 0.16 |
| 1 | GM | 05-12-2011 | 12:53:18 | 2 | 1 | -21.69 | 0.05 |
| 1 | GM | 05-12-2011 | 12:56:50 | 2 | 1 | -20.69 | 0.05 |
| 1 | GM | 05-12-2011 | 13:00:10 | 2 | 1 | -19.69 | 0.1 |
| 1 | GM | 05-12-2011 | 13:03:32 | 2 | 1 | -18.69 | 7.59 |
| 1 | GM | 05-12-2011 | 13:06:57 | 2 | 1 | -17.69 | 161.2 |
| 1 | GM | 05-12-2011 | 13:10:16 | 2 | 1 | -16.69 | 331.9 |
| 1 | GM | 05-12-2011 | 13:13:41 | 2 | 1 | -15.69 | 653.3 |
| 1 | GM | 05-12-2011 | 13:16:58 | 2 | 1 | -14.69 | 2439 |
| 1 | GM | 05-12-2011 | 13:20:14 | 2 | 1 | -13.69 | 1188 |
| 1 | GM | 05-12-2011 | 13:23:43 | 2 | 1 | -12.69 | 272.2 |
| 1 | GM | 05-12-2011 | 13:27:05 | 2 | 1 | -11.69 | 131.8 |
| 1 | GM | 05-12-2011 | 13:30:26 | 2 | 1 | -10.69 | 53.06 |
| 1 | GM | 05-12-2011 | 13:36:09 | 2 | 1 | -9.69 | 3.35 |
| 1 | GM | 05-12-2011 | 13:39:32 | 2 | 1 | -8.69 | 3.61 |
| 1 | GM | 05-12-2011 | 13:42:49 | 2 | 1 | -7.69 | 1.59 |
| 1 | GM | 05-12-2011 | 13:46:05 | 2 | 1 | -6.69 | 0.28 |
| 1 | GM | 05-12-2011 | 13:49:26 | 2 | 1 | -5.69 | 0.02 |
| 1 | GM | 05-12-2011 | 13:52:45 | 2 | 1 | -4.69 | 0.08 |
| 1 | GM | 05-12-2011 | 13:56:14 | 2 | 1 | -3.69 | 0.01 |
| 1 | GM | 05-12-2011 | 13:59:49 | 2 | 1 | -2.69 | 0.2 |
| 1 | GM | 05-12-2011 | 14:03:23 | 2 | 1 | -1.69 | 0.18 |
| 1 | GM | 05-12-2011 | 14:07:11 | 2 | 2 | -22.69 | 0.06 |
| 1 | GM | 05-12-2011 | 14:10:45 | 2 | 2 | -21.69 | 0 |
| 1 | GM | 05-12-2011 | 14:14:02 | 2 | 2 | -20.69 | 0 |
| 1 | GM | 05-12-2011 | 14:17:16 | 2 | 2 | -19.69 | 0.39 |
| 1 | GM | 05-12-2011 | 14:20:35 | 2 | 2 | -18.69 | 21.45 |
| 1 | GM | 05-12-2011 | 14:23:51 | 2 | 2 | -17.69 | 197.7 |
| 1 | GM | 05-12-2011 | 14:27:06 | 2 | 2 | -16.69 | 368.2 |
| 1 | GM | 05-12-2011 | 14:30:26 | 2 | 2 | -15.69 | 1820 |
| 1 | GM | 05-12-2011 | 14:33:48 | 2 | 2 | -14.69 | 1144 |
| 1 | GM | 05-12-2011 | 14:37:03 | 2 | 2 | -13.69 | 137.8 |
| 1 | GM | 05-12-2011 | 14:40:24 | 2 | 2 | -12.69 | 32.55 |
| 1 | GM | 05-12-2011 | 14:43:39 | 2 | 2 | -11.69 | 30.41 |
| 1 | GM | 05-12-2011 | 14:47:01 | 2 | 2 | -10.69 | 4.13 |
| 1 | GM | 05-12-2011 | 14:50:27 | 2 | 2 | -9.69 | 0.74 |
| 1 | GM | 05-12-2011 | 14:54:07 | 2 | 2 | -8.69 | 0.61 |
| 1 | GM | 05-12-2011 | 14:57:22 | 2 | 2 | -7.69 | 0.64 |
| 1 | GM | 05-12-2011 | 15:00:38 | 2 | 2 | -6.69 | 0.05 |
| 1 | GM | 05-12-2011 | 15:03:55 | 2 | 2 | -5.69 | 0.02 |
| 1 | GM | 05-12-2011 | 15:07:14 | 2 | 2 | -4.69 | 0 |
| 1 | GM | 05-12-2011 | 15:10:27 | 2 | 2 | -3.69 | 0.12 |
| 1 | GM | 05-12-2011 | 15:14:02 | 2 | 2 | -2.69 | 0.03 |
| 1 | GM | 05-12-2011 | 15:17:23 | 2 | 2 | -1.69 | 0 |

# Appendix Table B 3 - VPU 3

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-16-2011 | 08:55:03 | 3 | 1 | -22.69 | 0.15 |
| 1 | GM | 05-16-2011 | 08:58:37 | 3 | 1 | -21.69 | 0 |
| 1 | GM | 05-16-2011 | 09:01:55 | 3 | 1 | -20.69 | 0.01 |
| 1 | GM | 05-16-2011 | 09:05:22 | 3 | 1 | -19.69 | 0.06 |
| 1 | GM | 05-16-2011 | 09:08:40 | 3 | 1 | -18.69 | 0.1 |
| 1 | GM | 05-16-2011 | 09:11:58 | 3 | 1 | -17.69 | 0.37 |
| 1 | GM | 05-16-2011 | 09:15:18 | 3 | 1 | -16.69 | 1.36 |
| 1 | GM | 05-16-2011 | 09:18:37 | 3 | 1 | -15.69 | 6.26 |
| 1 | GM | 05-16-2011 | 09:21:50 | 3 | 1 | -14.69 | 2.56 |
| 1 | GM | 05-16-2011 | 09:25:14 | 3 | 1 | -13.69 | 2.51 |
| 1 | GM | 05-16-2011 | 09:28:26 | 3 | 1 | -12.69 | 0.81 |
| 1 | GM | 05-16-2011 | 09:31:38 | 3 | 1 | -11.69 | 0.9 |
| 1 | GM | 05-16-2011 | 09:34:50 | 3 | 1 | -10.69 | 2.33 |
| 1 | GM | 05-16-2011 | 09:38:14 | 3 | 1 | -9.69 | 2.08 |
| 1 | GM | 05-16-2011 | 09:41:27 | 3 | 1 | -8.69 | 0.17 |
| 1 | GM | 05-16-2011 | 09:44:40 | 3 | 1 | -7.69 | 0.05 |
| 1 | GM | 05-16-2011 | 09:47:55 | 3 | 1 | -6.69 | 0 |
| 1 | GM | 05-16-2011 | 09:51:12 | 3 | 1 | -5.69 | 0.08 |
| 1 | GM | 05-16-2011 | 09:54:26 | 3 | 1 | -4.69 | 0 |
| 1 | GM | 05-16-2011 | 09:57:38 | 3 | 1 | -3.69 | 0.02 |
| 1 | GM | 05-16-2011 | 10:00:50 | 3 | 1 | -2.69 | 0.01 |
| 1 | GM | 05-16-2011 | 10:04:05 | 3 | 1 | -1.69 | 0 |
| 1 | GM | 05-16-2011 | 10:08:54 | 3 | 2 | -22.69 | 0.01 |
| 1 | GM | 05-16-2011 | 10:12:10 | 3 | 2 | -21.69 | 0 |
| 1 | GM | 05-16-2011 | 10:15:28 | 3 | 2 | -20.69 | 0 |
| 1 | GM | 05-16-2011 | 10:18:44 | 3 | 2 | -19.69 | 5 |
| 1 | GM | 05-16-2011 | 10:21:57 | 3 | 2 | -18.69 | 0.39 |
| 1 | GM | 05-16-2011 | 10:25:12 | 3 | 2 | -17.69 | 6.86 |
| 1 | GM | 05-16-2011 | 10:28:30 | 3 | 2 | -16.69 | 5.17 |
| 1 | GM | 05-16-2011 | 10:31:46 | 3 | 2 | -15.69 | 4.58 |
| 1 | GM | 05-16-2011 | 10:34:59 | 3 | 2 | -14.69 | 1.9 |
| 1 | GM | 05-16-2011 | 10:38:13 | 3 | 2 | -13.69 | 7.93 |
| 1 | GM | 05-16-2011 | 10:41:27 | 3 | 2 | -12.69 | 8.09 |
| 1 | GM | 05-16-2011 | 10:44:39 | 3 | 2 | -11.69 | 13.84 |
| 1 | GM | 05-16-2011 | 10:47:54 | 3 | 2 | -10.69 | 20.42 |
| 1 | GM | 05-16-2011 | 12:05:49 | 3 | 2 | -9.69 | 18.32 |
| 1 | GM | 05-16-2011 | 12:09:03 | 3 | 2 | -8.69 | 2.18 |
| 1 | GM | 05-16-2011 | 12:12:16 | 3 | 2 | -7.69 | 0.02 |
| 1 | GM | 05-16-2011 | 12:15:28 | 3 | 2 | -6.69 | 0.27 |
| 1 | GM | 05-16-2011 | 12:18:39 | 3 | 2 | -5.69 | 0.04 |
| 1 | GM | 05-16-2011 | 12:21:55 | 3 | 2 | -4.69 | 0 |
| 1 | GM | 05-16-2011 | 12:25:08 | 3 | 2 | -3.69 | 0.01 |
| 1 | GM | 05-16-2011 | 12:28:20 | 3 | 2 | -2.69 | 0 |
| 1 | GM | 05-16-2011 | 12:33:58 | 3 | 2 | -2.69 | 0.26 |
| 1 | GM | 05-16-2011 | 12:37:26 | 3 | 2 | 1.31 | 0 |

# Appendix Table B 4 - VPU 4

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-16-2011 | 12:42:26 | 4 | 1 | -22.69 | 0.15 |
| 1 | GM | 05-16-2011 | 12:45:43 | 4 | 1 | -21.69 | 0.03 |
| 1 | GM | 05-16-2011 | 12:48:57 | 4 | 1 | -20.69 | 0.19 |
| 1 | GM | 05-16-2011 | 12:52:10 | 4 | 1 | -19.69 | 0.04 |
| 1 | GM | 05-16-2011 | 12:55:24 | 4 | 1 | -18.69 | 0.37 |
| 1 | GM | 05-16-2011 | 12:58:39 | 4 | 1 | -17.69 | 2.24 |
| 1 | GM | 05-16-2011 | 13:01:53 | 4 | 1 | -16.69 | 1.66 |
| 1 | GM | 05-16-2011 | 13:05:15 | 4 | 1 | -15.69 | 1.53 |
| 1 | GM | 05-16-2011 | 13:08:30 | 4 | 1 | -14.69 | 5.21 |
| 1 | GM | 05-16-2011 | 13:11:42 | 4 | 1 | -13.69 | 4.59 |
| 1 | GM | 05-16-2011 | 13:15:04 | 4 | 1 | -12.69 | 4.79 |
| 1 | GM | 05-16-2011 | 13:18:26 | 4 | 1 | -11.69 | 4.72 |
| 1 | GM | 05-16-2011 | 13:21:40 | 4 | 1 | -10.69 | 1.6 |
| 1 | GM | 05-16-2011 | 13:25:21 | 4 | 1 | -9.69 | 0.26 |
| 1 | GM | 05-16-2011 | 13:29:22 | 4 | 1 | -8.69 | 2.18 |
| 1 | GM | 05-16-2011 | 13:33:10 | 4 | 1 | -7.69 | 0.82 |
| 1 | GM | 05-16-2011 | 13:36:26 | 4 | 1 | -6.69 | 0.01 |
| 1 | GM | 05-16-2011 | 13:39:44 | 4 | 1 | -5.69 | 0.07 |
| 1 | GM | 05-16-2011 | 13:42:56 | 4 | 1 | -4.69 | 0.01 |
| 1 | GM | 05-16-2011 | 13:46:06 | 4 | 1 | -3.69 | 0.12 |
| 1 | GM | 05-16-2011 | 13:49:18 | 4 | 1 | -2.69 | 0 |
| 1 | GM | 05-16-2011 | 13:52:30 | 4 | 1 | -1.69 | 0.05 |
| 1 | GM | 05-16-2011 | 13:57:29 | 4 | 2 | -22.69 | 0 |
| 1 | GM | 05-16-2011 | 14:00:45 | 4 | 2 | -21.69 | 0 |
| 1 | GM | 05-16-2011 | 14:03:58 | 4 | 2 | -20.69 | 0.03 |
| 1 | GM | 05-16-2011 | 14:07:11 | 4 | 2 | -19.69 | 0.02 |
| 1 | GM | 05-16-2011 | 14:10:25 | 4 | 2 | -18.69 | 2.17 |
| 1 | GM | 05-16-2011 | 14:13:41 | 4 | 2 | -17.69 | 13.69 |
| 1 | GM | 05-16-2011 | 14:16:55 | 4 | 2 | -16.69 | 5.73 |
| 1 | GM | 05-16-2011 | 14:20:09 | 4 | 2 | -15.69 | 32.18 |
| 1 | GM | 05-16-2011 | 14:23:24 | 4 | 2 | -14.69 | 85.84 |
| 1 | GM | 05-16-2011 | 14:26:43 | 4 | 2 | -13.69 | 42.91 |
| 1 | GM | 05-16-2011 | 14:30:06 | 4 | 2 | -12.69 | 65.6 |
| 1 | GM | 05-16-2011 | 14:33:20 | 4 | 2 | -11.69 | 88.86 |
| 1 | GM | 05-16-2011 | 14:36:34 | 4 | 2 | -10.69 | 10.05 |
| 1 | GM | 05-16-2011 | 14:39:52 | 4 | 2 | -9.69 | 17.21 |
| 1 | GM | 05-16-2011 | 14:43:08 | 4 | 2 | -8.69 | 456.1 |
| 1 | GM | 05-16-2011 | 14:46:29 | 4 | 2 | -7.69 | 142.9 |
| 1 | GM | 05-16-2011 | 14:49:43 | 4 | 2 | -6.69 | 156.3 |
| 1 | GM | 05-16-2011 | 14:52:59 | 4 | 2 | -5.69 | 4.17 |
| 1 | GM | 05-16-2011 | 14:56:19 | 4 | 2 | -4.69 | 0.14 |
| 1 | GM | 05-16-2011 | 14:59:54 | 4 | 2 | -3.69 | 0.01 |
| 1 | GM | 05-16-2011 | 15:03:09 | 4 | 2 | -2.69 | 0 |
| 1 | GM | 05-16-2011 | 15:06:27 | 4 | 2 | -2.69 | 0 |
| 1 | GM | 05-16-2011 | 15:09:43 | 4 | 2 | -1.69 | 0.03 |

# Appendix Table B 5 - VPU 5

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-16-2011 | 15:15:42 | 5 | 1 | -22.69 | 0 |
| 1 | GM | 05-16-2011 | 15:20:49 | 5 | 1 | -21.69 | 0.02 |
| 1 | GM | 05-16-2011 | 15:24:05 | 5 | 1 | -20.69 | 0.15 |
| 1 | GM | 05-16-2011 | 15:27:20 | 5 | 1 | -19.69 | 0 |
| 1 | GM | 05-16-2011 | 15:33:27 | 5 | 1 | -18.69 | 0.11 |
| 1 | GM | 05-17-2011 | 07:37:35 | 5 | 1 | -17.69 | 0.17 |
| 1 | GM | 05-17-2011 | 07:41:08 | 5 | 1 | -16.69 | 0.05 |
| 1 | GM | 05-17-2011 | 07:44:30 | 5 | 1 | -15.69 | 0.21 |
| 1 | GM | 05-17-2011 | 07:48:01 | 5 | 1 | -14.69 | 0.39 |
| 1 | GM | 05-17-2011 | 07:51:14 | 5 | 1 | -13.69 | 1.24 |
| 1 | GM | 05-17-2011 | 07:54:29 | 5 | 1 | -12.69 | 0.37 |
| 1 | GM | 05-17-2011 | 07:57:42 | 5 | 1 | -11.69 | 0.27 |
| 1 | GM | 05-17-2011 | 08:00:56 | 5 | 1 | -10.69 | 0.57 |
| 1 | GM | 05-17-2011 | 08:04:09 | 5 | 1 | -9.69 | 0.37 |
| 1 | GM | 05-17-2011 | 08:07:24 | 5 | 1 | -8.69 | 0.42 |
| 1 | GM | 05-17-2011 | 08:10:39 | 5 | 1 | -7.69 | 0.14 |
| 1 | GM | 05-17-2011 | 08:14:04 | 5 | 1 | -7.69 | 0 |
| 1 | GM | 05-17-2011 | 08:17:18 | 5 | 1 | -5.69 | 0 |
| 1 | GM | 05-17-2011 | 08:20:31 | 5 | 1 | -4.69 | 0.01 |
| 1 | GM | 05-17-2011 | 08:23:45 | 5 | 1 | -3.69 | 0 |
| 1 | GM | 05-17-2011 | 08:27:59 | 5 | 1 | -2.69 | 0.01 |
| 1 | GM | 05-17-2011 | 08:34:12 | 5 | 1 | -1.69 | 0 |
| 1 | GM | 05-17-2011 | 08:37:34 | 5 | 2 | -22.69 | 0 |
| 1 | GM | 05-17-2011 | 08:40:47 | 5 | 2 | -21.69 | 0 |
| 1 | GM | 05-17-2011 | 08:44:02 | 5 | 2 | -20.69 | 0.03 |
| 1 | GM | 05-17-2011 | 08:47:12 | 5 | 2 | -19.69 | 0.88 |
| 1 | GM | 05-17-2011 | 08:50:32 | 5 | 2 | -18.69 | 28.49 |
| 1 | GM | 05-17-2011 | 08:54:49 | 5 | 2 | -17.69 | 268.4 |
| 1 | GM | 05-17-2011 | 08:58:00 | 5 | 2 | -16.69 | 38.45 |
| 1 | GM | 05-17-2011 | 09:01:32 | 5 | 2 | -15.69 | 55.01 |
| 1 | GM | 05-17-2011 | 09:04:47 | 5 | 2 | -14.69 | 15.89 |
| 1 | GM | 05-17-2011 | 09:08:03 | 5 | 2 | -13.69 | 32.3 |
| 1 | GM | 05-17-2011 | 09:11:31 | 5 | 2 | -12.69 | 121.2 |
| 1 | GM | 05-17-2011 | 09:14:44 | 5 | 2 | -11.69 | 32.04 |
| 1 | GM | 05-17-2011 | 09:17:55 | 5 | 2 | -10.69 | 7.03 |
| 1 | GM | 05-17-2011 | 09:21:09 | 5 | 2 | -9.69 | 12.36 |
| 1 | GM | 05-17-2011 | 09:24:21 | 5 | 2 | -8.69 | 178.5 |
| 1 | GM | 05-17-2011 | 09:27:34 | 5 | 2 | -7.69 | 17.16 |
| 1 | GM | 05-17-2011 | 09:31:16 | 5 | 2 | -6.69 | 0.51 |
| 1 | GM | 05-17-2011 | 09:34:29 | 5 | 2 | -5.69 | 0.01 |
| 1 | GM | 05-17-2011 | 09:37:41 | 5 | 2 | -4.69 | 0 |
| 1 | GM | 05-17-2011 | 09:40:50 | 5 | 2 | -3.69 | 0.02 |
| 1 | GM | 05-17-2011 | 09:44:04 | 5 | 2 | -2.69 | 0 |
| 1 | GM | 05-17-2011 | 09:49:08 | 5 | 2 | -1.69 | 0 |

# Appendix Table B 6 - VPU 6

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-17-2011 | 09:53:44 | 6 | 1 | -22.69 | 0.01 |
| 1 | GM | 05-17-2011 | 09:56:56 | 6 | 1 | -21.69 | 0.04 |
| 1 | GM | 05-17-2011 | 10:00:14 | 6 | 1 | -20.69 | 0 |
| 1 | GM | 05-17-2011 | 10:03:27 | 6 | 1 | -19.69 | 0.06 |
| 1 | GM | 05-17-2011 | 10:06:55 | 6 | 1 | -18.69 | 1.45 |
| 1 | GM | 05-17-2011 | 10:10:09 | 6 | 1 | -17.69 | 9.89 |
| 1 | GM | 05-17-2011 | 10:13:21 | 6 | 1 | -16.69 | 22.8 |
| 1 | GM | 05-17-2011 | 10:16:45 | 6 | 1 | -15.69 | 13.25 |
| 1 | GM | 05-17-2011 | 10:19:58 | 6 | 1 | -14.69 | 6.5 |
| 1 | GM | 05-17-2011 | 10:23:09 | 6 | 1 | -13.69 | 7.95 |
| 1 | GM | 05-17-2011 | 10:26:32 | 6 | 1 | -12.69 | 41.33 |
| 1 | GM | 05-17-2011 | 10:29:44 | 6 | 1 | -11.69 | 27.17 |
| 1 | GM | 05-17-2011 | 10:33:04 | 6 | 1 | -10.69 | 2.63 |
| 1 | GM | 05-17-2011 | 10:36:16 | 6 | 1 | -9.69 | 1.52 |
| 1 | GM | 05-17-2011 | 10:39:37 | 6 | 1 | -8.69 | 0.82 |
| 1 | GM | 05-17-2011 | 12:00:49 | 6 | 1 | -5.69 | 0 |
| 1 | GM | 05-17-2011 | 12:04:03 | 6 | 1 | -4.69 | 0.11 |
| 1 | GM | 05-17-2011 | 12:07:15 | 6 | 1 | -3.69 | 0 |
| 1 | GM | 05-17-2011 | 12:10:35 | 6 | 1 | -2.69 | 0.2 |
| 1 | GM | 05-17-2011 | 12:13:45 | 6 | 1 | -1.69 | 0.3 |
| 1 | GM | 05-17-2011 | 12:17:48 | 6 | 2 | -22.69 | 0 |
| 1 | GM | 05-17-2011 | 12:21:00 | 6 | 2 | -21.69 | 0.01 |
| 1 | GM | 05-17-2011 | 12:24:11 | 6 | 2 | -20.69 | 0.09 |
| 1 | GM | 05-17-2011 | 12:27:25 | 6 | 2 | -19.69 | 0.19 |
| 1 | GM | 05-17-2011 | 12:30:43 | 6 | 2 | -18.69 | 3.05 |
| 1 | GM | 05-17-2011 | 12:33:55 | 6 | 2 | -17.69 | 50.25 |
| 1 | GM | 05-17-2011 | 12:37:05 | 6 | 2 | -16.69 | 53.22 |
| 1 | GM | 05-17-2011 | 12:40:18 | 6 | 2 | -15.69 | 41.28 |
| 1 | GM | 05-17-2011 | 12:43:29 | 6 | 2 | -14.69 | 22.39 |
| 1 | GM | 05-17-2011 | 12:46:47 | 6 | 2 | -13.69 | 5.73 |
| 1 | GM | 05-17-2011 | 12:50:21 | 6 | 2 | -12.69 | 12.75 |
| 1 | GM | 05-17-2011 | 12:53:34 | 6 | 2 | -11.69 | 34.87 |
| 1 | GM | 05-17-2011 | 12:56:49 | 6 | 2 | -10.69 | 190.3 |
| 1 | GM | 05-17-2011 | 13:00:02 | 6 | 2 | -9.69 | 101.5 |
| 1 | GM | 05-17-2011 | 13:03:15 | 6 | 2 | -8.69 | 11.38 |
| 1 | GM | 05-17-2011 | 13:06:53 | 6 | 2 | -7.69 | 0.41 |
| 1 | GM | 05-17-2011 | 13:10:26 | 6 | 2 | -6.69 | 0.07 |
| 1 | GM | 05-17-2011 | 13:13:51 | 6 | 2 | -5.69 | 0.01 |
| 1 | GM | 05-17-2011 | 13:17:03 | 6 | 2 | -4.69 | 0 |
| 1 | GM | 05-17-2011 | 13:20:18 | 6 | 2 | -3.69 | 0 |
| 1 | GM | 05-17-2011 | 13:23:29 | 6 | 2 | -2.69 | 0 |
| 1 | GM | 05-17-2011 | 13:26:48 | 6 | 2 | -1.69 | 0.05 |

# Appendix Table B 7 - VPU 7

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-17-2011 | 13:32:40 | 7 | 1 | -22.69 | 0 |
| 1 | GM | 05-17-2011 | 13:35:53 | 7 | 1 | -21.69 | 0.07 |
| 1 | GM | 05-17-2011 | 13:39:04 | 7 | 1 | -20.69 | 0.02 |
| 1 | GM | 05-17-2011 | 13:42:23 | 7 | 1 | -19.69 | 0.15 |
| 1 | GM | 05-17-2011 | 13:46:13 | 7 | 1 | -19.69 | 0.18 |
| 1 | GM | 05-18-2011 | 07:43:05 | 7 | 1 | -18.69 | 4.01 |
| 1 | GM | 05-18-2011 | 07:46:20 | 7 | 1 | -17.69 | 29.18 |
| 1 | GM | 05-18-2011 | 07:49:40 | 7 | 1 | -16.69 | 63.75 |
| 1 | GM | 05-18-2011 | 07:52:57 | 7 | 1 | -15.69 | 79.16 |
| 1 | GM | 05-18-2011 | 07:56:23 | 7 | 1 | -14.69 | 57.82 |
| 1 | GM | 05-18-2011 | 07:59:39 | 7 | 1 | -13.69 | 15.27 |
| 1 | GM | 05-18-2011 | 08:03:12 | 7 | 1 | -12.69 | 1.36 |
| 1 | GM | 05-18-2011 | 08:06:28 | 7 | 1 | -11.69 | 1.14 |
| 1 | GM | 05-18-2011 | 08:09:44 | 7 | 1 | -10.69 | 3.68 |
| 1 | GM | 05-18-2011 | 08:13:12 | 7 | 1 | -9.69 | 4.58 |
| 1 | GM | 05-18-2011 | 08:16:43 | 7 | 1 | -8.69 | 4.29 |
| 1 | GM | 05-18-2011 | 08:19:54 | 7 | 1 | -7.69 | 0.14 |
| 1 | GM | 05-18-2011 | 08:23:07 | 7 | 1 | -6.69 | 0 |
| 1 | GM | 05-18-2011 | 08:26:23 | 7 | 1 | -5.69 | 0.1 |
| 1 | GM | 05-18-2011 | 08:29:39 | 7 | 1 | -4.69 | 0.13 |
| 1 | GM | 05-18-2011 | 08:32:55 | 7 | 1 | -3.69 | 0.04 |
| 1 | GM | 05-18-2011 | 08:36:14 | 7 | 1 | -2.69 | 0 |
| 1 | GM | 05-18-2011 | 08:39:27 | 7 | 1 | -1.69 | 0.2 |
| 1 | GM | 05-18-2011 | 08:44:46 | 7 | 2 | -22.69 | 0 |
| 1 | GM | 05-18-2011 | 08:48:07 | 7 | 2 | -21.69 | 6.05 |
| 1 | GM | 05-18-2011 | 08:51:46 | 7 | 2 | -20.69 | 0 |
| 1 | GM | 05-18-2011 | 08:55:05 | 7 | 2 | -19.69 | 0.02 |
| 1 | GM | 05-18-2011 | 08:58:27 | 7 | 2 | -18.69 | 1.36 |
| 1 | GM | 05-18-2011 | 09:01:39 | 7 | 2 | -17.69 | 9.1 |
| 1 | GM | 05-18-2011 | 09:04:53 | 7 | 2 | -16.69 | 13.35 |
| 1 | GM | 05-18-2011 | 09:08:11 | 7 | 2 | -15.69 | 17.69 |
| 1 | GM | 05-18-2011 | 09:11:37 | 7 | 2 | -14.69 | 8.37 |
| 1 | GM | 05-18-2011 | 09:14:51 | 7 | 2 | -13.69 | 5.65 |
| 1 | GM | 05-18-2011 | 09:18:07 | 7 | 2 | -12.69 | 5.59 |
| 1 | GM | 05-18-2011 | 09:21:24 | 7 | 2 | -11.69 | 1.85 |
| 1 | GM | 05-18-2011 | 09:24:39 | 7 | 2 | -10.69 | 0.72 |
| 1 | GM | 05-18-2011 | 09:27:51 | 7 | 2 | -9.69 | 2.02 |
| 1 | GM | 05-18-2011 | 09:31:06 | 7 | 2 | -8.69 | 1.22 |
| 1 | GM | 05-18-2011 | 09:34:24 | 7 | 2 | -7.69 | 0.33 |
| 1 | GM | 05-18-2011 | 09:37:45 | 7 | 2 | -6.69 | 0 |
| 1 | GM | 05-18-2011 | 09:41:04 | 7 | 2 | -5.69 | 0 |
| 1 | GM | 05-18-2011 | 09:44:19 | 7 | 2 | -4.69 | 0.01 |
| 1 | GM | 05-18-2011 | 09:47:34 | 7 | 2 | -3.69 | 0 |
| 1 | GM | 05-18-2011 | 09:50:48 | 7 | 2 | -2.69 | 0.13 |
| 1 | GM | 05-18-2011 | 09:54:09 | 7 | 2 | -1.69 | 0 |

# Appendix Table B 8 - VPU 8

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-18-2011 | 09:58:40 | 8 | 1 | -22.69 | 0.01 |
| 1 | GM | 05-18-2011 | 10:01:52 | 8 | 1 | -21.69 | 0 |
| 1 | GM | 05-18-2011 | 10:05:05 | 8 | 1 | -20.69 | 0.04 |
| 1 | GM | 05-18-2011 | 10:08:19 | 8 | 1 | -19.69 | 0.03 |
| 1 | GM | 05-18-2011 | 10:11:34 | 8 | 1 | -18.69 | 0.76 |
| 1 | GM | 05-18-2011 | 10:14:49 | 8 | 1 | -17.69 | 4.82 |
| 1 | GM | 05-18-2011 | 10:18:11 | 8 | 1 | -16.69 | 17.04 |
| 1 | GM | 05-18-2011 | 10:21:33 | 8 | 1 | -15.69 | 92.3 |
| 1 | GM | 05-18-2011 | 10:24:52 | 8 | 1 | -14.69 | 608.2 |
| 1 | GM | 05-18-2011 | 10:28:10 | 8 | 1 | -13.69 | 1049 |
| 1 | GM | 05-18-2011 | 10:31:27 | 8 | 1 | -12.69 | 428.5 |
| 1 | GM | 05-18-2011 | 10:34:58 | 8 | 1 | -11.69 | 71.11 |
| 1 | GM | 05-18-2011 | 10:38:13 | 8 | 1 | -10.69 | 111.9 |
| 1 | GM | 05-18-2011 | 10:41:31 | 8 | 1 | -9.69 | 47.19 |
| 1 | GM | 05-18-2011 | 10:44:43 | 8 | 1 | -8.69 | 7.65 |
| 1 | GM | 05-18-2011 | 11:53:21 | 8 | 1 | -7.69 | 2.05 |
| 1 | GM | 05-18-2011 | 11:58:13 | 8 | 1 | -6.69 | 0.02 |
| 1 | GM | 05-18-2011 | 12:01:25 | 8 | 1 | -5.69 | 0.08 |
| 1 | GM | 05-18-2011 | 12:04:36 | 8 | 1 | -4.69 | 0 |
| 1 | GM | 05-18-2011 | 12:07:49 | 8 | 1 | -3.69 | 0.2 |
| 1 | GM | 05-18-2011 | 12:11:07 | 8 | 1 | -2.69 | 0.09 |
| 1 | GM | 05-18-2011 | 12:14:16 | 8 | 1 | -1.69 | 0.01 |
| 1 | GM | 05-18-2011 | 12:19:06 | 8 | 2 | -22.69 | 0 |
| 1 | GM | 05-18-2011 | 12:22:19 | 8 | 2 | -21.69 | 0 |
| 1 | GM | 05-18-2011 | 12:25:32 | 8 | 2 | -20.69 | 0.17 |
| 1 | GM | 05-18-2011 | 12:28:45 | 8 | 2 | -19.69 | 0.12 |
| 1 | GM | 05-18-2011 | 12:31:55 | 8 | 2 | -18.69 | 0.87 |
| 1 | GM | 05-18-2011 | 12:35:11 | 8 | 2 | -17.69 | 5.5 |
| 1 | GM | 05-18-2011 | 12:38:22 | 8 | 2 | -16.69 | 21.02 |
| 1 | GM | 05-18-2011 | 12:41:35 | 8 | 2 | -15.69 | 43.93 |
| 1 | GM | 05-18-2011 | 12:44:55 | 8 | 2 | -14.69 | 112.9 |
| 1 | GM | 05-18-2011 | 12:48:07 | 8 | 2 | -13.69 | 460.7 |
| 1 | GM | 05-18-2011 | 12:51:19 | 8 | 2 | -12.69 | 429.5 |
| 1 | GM | 05-18-2011 | 12:54:59 | 8 | 2 | -11.69 | 41.73 |
| 1 | GM | 05-18-2011 | 12:58:09 | 8 | 2 | -10.69 | 8.7 |
| 1 | GM | 05-18-2011 | 13:01:34 | 8 | 2 | -9.69 | 15.77 |
| 1 | GM | 05-18-2011 | 13:04:47 | 8 | 2 | -8.69 | 28.04 |
| 1 | GM | 05-18-2011 | 13:08:02 | 8 | 2 | -7.69 | 17.97 |
| 1 | GM | 05-18-2011 | 13:11:14 | 8 | 2 | -6.69 | 0.43 |
| 1 | GM | 05-18-2011 | 13:14:26 | 8 | 2 | -5.69 | 0 |
| 1 | GM | 05-18-2011 | 13:17:39 | 8 | 2 | -4.69 | 0.01 |
| 1 | GM | 05-18-2011 | 13:20:49 | 8 | 2 | -3.69 | 0.02 |
| 1 | GM | 05-18-2011 | 13:24:00 | 8 | 2 | -2.69 | 0.15 |
| 1 | GM | 05-18-2011 | 13:27:21 | 8 | 2 | -1.69 | 0.12 |

# Appendix Table B 9 - VPU 9

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-18-2011 | 13:33:36 | 9 | 1 | -22.69 | 0 |
| 1 | GM | 05-18-2011 | 13:36:48 | 9 | 1 | -21.69 | 0.06 |
| 1 | GM | 05-18-2011 | 13:39:59 | 9 | 1 | -20.69 | 0 |
| 1 | GM | 05-18-2011 | 13:43:14 | 9 | 1 | -19.69 | 0.13 |
| 1 | GM | 05-18-2011 | 13:46:27 | 9 | 1 | -18.69 | 15.03 |
| 1 | GM | 05-18-2011 | 13:49:40 | 9 | 1 | -17.69 | 187.1 |
| 1 | GM | 05-18-2011 | 13:52:57 | 9 | 1 | -16.69 | 65.92 |
| 1 | GM | 05-18-2011 | 13:56:10 | 9 | 1 | -15.69 | 211.8 |
| 1 | GM | 05-18-2011 | 13:59:32 | 9 | 1 | -14.69 | 70.98 |
| 1 | GM | 05-18-2011 | 14:02:47 | 9 | 1 | -13.69 | 2.85 |
| 1 | GM | 05-18-2011 | 14:06:00 | 9 | 1 | -12.69 | 1.87 |
| 1 | GM | 05-18-2011 | 14:09:16 | 9 | 1 | -11.69 | 2.04 |
| 1 | GM | 05-18-2011 | 14:12:29 | 9 | 1 | -10.69 | 0.47 |
| 1 | GM | 05-18-2011 | 14:15:42 | 9 | 1 | -9.69 | 4.05 |
| 1 | GM | 05-18-2011 | 14:19:12 | 9 | 1 | -8.69 | 8.79 |
| 1 | GM | 05-18-2011 | 14:22:27 | 9 | 1 | -7.69 | 1.61 |
| 1 | GM | 05-18-2011 | 14:25:43 | 9 | 1 | -6.69 | 0.22 |
| 1 | GM | 05-18-2011 | 14:29:19 | 9 | 1 | -5.69 | 0.26 |
| 1 | GM | 05-18-2011 | 14:32:41 | 9 | 1 | -4.69 | 0 |
| 1 | GM | 05-18-2011 | 14:36:05 | 9 | 1 | -3.69 | 8.55 |
| 1 | GM | 05-18-2011 | 14:39:26 | 9 | 1 | -2.69 | 0 |
| 1 | GM | 05-18-2011 | 14:42:39 | 9 | 1 | -1.69 | 0.12 |
| 1 | GM | 05-18-2011 | 14:49:31 | 9 | 2 | -22.69 | 0 |
| 1 | GM | 05-18-2011 | 14:52:46 | 9 | 2 | -21.69 | 0 |
| 1 | GM | 05-18-2011 | 14:56:21 | 9 | 2 | -20.69 | 0.02 |
| 1 | GM | 05-18-2011 | 14:59:35 | 9 | 2 | -19.69 | 0.11 |
| 1 | GM | 05-18-2011 | 15:02:50 | 9 | 2 | -18.69 | 3.51 |
| 1 | GM | 05-18-2011 | 15:06:04 | 9 | 2 | -17.69 | 24.55 |
| 1 | GM | 05-18-2011 | 15:09:17 | 9 | 2 | -16.69 | 10.18 |
| 1 | GM | 05-18-2011 | 15:12:30 | 9 | 2 | -15.69 | 23.46 |
| 1 | GM | 05-18-2011 | 15:15:42 | 9 | 2 | -14.69 | 7.71 |
| 1 | GM | 05-18-2011 | 15:18:57 | 9 | 2 | -13.69 | 1.35 |
| 1 | GM | 05-18-2011 | 15:22:08 | 9 | 2 | -12.69 | 2.16 |
| 1 | GM | 05-18-2011 | 15:25:18 | 9 | 2 | -11.69 | 2.1 |
| 1 | GM | 05-18-2011 | 15:28:28 | 9 | 2 | -10.69 | 3 |
| 1 | GM | 05-18-2011 | 15:31:45 | 9 | 2 | -9.69 | 0.43 |
| 1 | GM | 05-19-2011 | 07:34:55 | 9 | 2 | -8.69 | 0.49 |
| 1 | GM | 05-19-2011 | 07:38:08 | 9 | 2 | -7.69 | 0.21 |
| 1 | GM | 05-19-2011 | 07:41:22 | 9 | 2 | -6.69 | 0 |
| 1 | GM | 05-19-2011 | 07:44:37 | 9 | 2 | -5.69 | 0 |
| 1 | GM | 05-19-2011 | 07:47:49 | 9 | 2 | -4.69 | 0.05 |
| 1 | GM | 05-19-2011 | 07:51:31 | 9 | 2 | -3.69 | 0 |
| 1 | GM | 05-19-2011 | 07:54:04 | 9 | 2 | -2.69 | 0.29 |
| 1 | GM | 05-19-2011 | 07:57:17 | 9 | 2 | -1.69 | 0.03 |

# Appendix Table B10 – VPU 10

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-19-2011 | 08:02:11 | 10 | 1 | -22.69 | 0.14 |
| 1 | GM | 05-19-2011 | 08:05:26 | 10 | 1 | -21.69 | 0 |
| 1 | GM | 05-19-2011 | 08:08:36 | 10 | 1 | -20.69 | 0 |
| 1 | GM | 05-19-2011 | 08:11:47 | 10 | 1 | -19.69 | 0.89 |
| 1 | GM | 05-19-2011 | 08:14:59 | 10 | 1 | -18.69 | 56.59 |
| 1 | GM | 05-19-2011 | 08:18:16 | 10 | 1 | -17.69 | 523.3 |
| 1 | GM | 05-19-2011 | 08:21:29 | 10 | 1 | -16.69 | 194.1 |
| 1 | GM | 05-19-2011 | 08:24:40 | 10 | 1 | -15.69 | 5.73 |
| 1 | GM | 05-19-2011 | 08:27:51 | 10 | 1 | -14.69 | 0.55 |
| 1 | GM | 05-19-2011 | 08:31:02 | 10 | 1 | -13.69 | 2.33 |
| 1 | GM | 05-19-2011 | 08:34:14 | 10 | 1 | -12.69 | 9.71 |
| 1 | GM | 05-19-2011 | 08:37:27 | 10 | 1 | -11.69 | 53.16 |
| 1 | GM | 05-19-2011 | 08:40:39 | 10 | 1 | -10.69 | 5.71 |
| 1 | GM | 05-19-2011 | 08:43:50 | 10 | 1 | -9.69 | 0.27 |
| 1 | GM | 05-19-2011 | 08:47:00 | 10 | 1 | -8.69 | 0.18 |
| 1 | GM | 05-19-2011 | 08:50:13 | 10 | 1 | -7.69 | 0.16 |
| 1 | GM | 05-19-2011 | 08:53:28 | 10 | 1 | -6.69 | 0.09 |
| 1 | GM | 05-19-2011 | 08:56:39 | 10 | 1 | -5.69 | 0 |
| 1 | GM | 05-19-2011 | 08:59:51 | 10 | 1 | -4.69 | 0.07 |
| 1 | GM | 05-19-2011 | 09:03:10 | 10 | 1 | -3.69 | 0 |
| 1 | GM | 05-19-2011 | 09:06:28 | 10 | 1 | -2.69 | 0.14 |
| 1 | GM | 05-19-2011 | 09:09:42 | 10 | 1 | -1.69 | 0.01 |
| 1 | GM | 05-19-2011 | 09:13:38 | 10 | 2 | -22.69 | 0 |
| 1 | GM | 05-19-2011 | 09:16:53 | 10 | 2 | -21.69 | 0 |
| 1 | GM | 05-19-2011 | 09:20:03 | 10 | 2 | -20.69 | 0 |
| 1 | GM | 05-19-2011 | 09:23:16 | 10 | 2 | -19.69 | 0.94 |
| 1 | GM | 05-19-2011 | 09:26:29 | 10 | 2 | -18.69 | 45.44 |
| 1 | GM | 05-19-2011 | 09:29:47 | 10 | 2 | -17.69 | 561.4 |
| 1 | GM | 05-19-2011 | 09:32:57 | 10 | 2 | -16.69 | 319.1 |
| 1 | GM | 05-19-2011 | 09:36:07 | 10 | 2 | -15.69 | 9.15 |
| 1 | GM | 05-19-2011 | 09:39:17 | 10 | 2 | -14.69 | 0.61 |
| 1 | GM | 05-19-2011 | 09:42:29 | 10 | 2 | -13.69 | 1.98 |
| 1 | GM | 05-19-2011 | 09:45:38 | 10 | 2 | -12.69 | 0.72 |
| 1 | GM | 05-19-2011 | 09:48:49 | 10 | 2 | -11.69 | 0.89 |
| 1 | GM | 05-19-2011 | 09:52:02 | 10 | 2 | -10.69 | 0.71 |
| 1 | GM | 05-19-2011 | 09:55:14 | 10 | 2 | -9.69 | 0.48 |
| 1 | GM | 05-19-2011 | 09:59:21 | 10 | 2 | -8.69 | 0.57 |
| 1 | GM | 05-19-2011 | 10:02:41 | 10 | 2 | -7.69 | 1.72 |
| 1 | GM | 05-19-2011 | 10:05:52 | 10 | 2 | -6.69 | 0.11 |
| 1 | GM | 05-19-2011 | 10:09:03 | 10 | 2 | -5.69 | 0.04 |
| 1 | GM | 05-19-2011 | 10:12:17 | 10 | 2 | -4.69 | 0 |
| 1 | GM | 05-19-2011 | 10:15:30 | 10 | 2 | -3.69 | 0 |
| 1 | GM | 05-19-2011 | 10:18:44 | 10 | 2 | -2.69 | 0.03 |
| 1 | GM | 05-19-2011 | 10:21:54 | 10 | 2 | -1.69 | 0.05 |

# Appendix Table B11 – VPU 11

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-19-2011 | 10:29:21 | 11 | 1 | -22.69 | 0 |
| 1 | GM | 05-19-2011 | 10:32:35 | 11 | 1 | -21.69 | 0.01 |
| 1 | GM | 05-19-2011 | 10:35:49 | 11 | 1 | -20.69 | 0.15 |
| 1 | GM | 05-19-2011 | 10:39:23 | 11 | 1 | -19.69 | 0.06 |
| 1 | GM | 05-19-2011 | 10:42:39 | 11 | 1 | -18.69 | 1.07 |
| 1 | GM | 05-19-2011 | 10:45:53 | 11 | 1 | -17.69 | 6.42 |
| 1 | GM | 05-19-2011 | 10:49:10 | 11 | 1 | -16.69 | 5.83 |
| 1 | GM | 05-19-2011 | 10:52:25 | 11 | 1 | -15.69 | 7.38 |
| 1 | GM | 05-19-2011 | 12:25:45 | 11 | 1 | -14.69 | 14.96 |
| 1 | GM | 05-19-2011 | 12:28:55 | 11 | 1 | -13.69 | 32.85 |
| 1 | GM | 05-19-2011 | 12:32:07 | 11 | 1 | -12.69 | 5.58 |
| 1 | GM | 05-19-2011 | 12:35:18 | 11 | 1 | -11.69 | 1.67 |
| 1 | GM | 05-19-2011 | 12:38:38 | 11 | 1 | -10.69 | 2.02 |
| 1 | GM | 05-19-2011 | 12:41:49 | 11 | 1 | -9.69 | 5.99 |
| 1 | GM | 05-19-2011 | 12:45:07 | 11 | 1 | -8.69 | 2.17 |
| 1 | GM | 05-19-2011 | 12:48:18 | 11 | 1 | -7.69 | 0 |
| 1 | GM | 05-19-2011 | 12:51:35 | 11 | 1 | -6.69 | 0.04 |
| 1 | GM | 05-19-2011 | 12:54:47 | 11 | 1 | -5.69 | 0 |
| 1 | GM | 05-19-2011 | 12:58:02 | 11 | 1 | -4.69 | 0.04 |
| 1 | GM | 05-19-2011 | 13:01:14 | 11 | 1 | -3.69 | 0 |
| 1 | GM | 05-19-2011 | 13:04:28 | 11 | 1 | -2.69 | 0.44 |
| 1 | GM | 05-19-2011 | 13:07:45 | 11 | 1 | -1.69 | 0.12 |
| 1 | GM | 05-19-2011 | 13:11:47 | 11 | 2 | -22.69 | 0.04 |
| 1 | GM | 05-19-2011 | 13:15:00 | 11 | 2 | -21.69 | 0 |
| 1 | GM | 05-19-2011 | 13:18:14 | 11 | 2 | -20.69 | 0 |
| 1 | GM | 05-19-2011 | 13:21:41 | 11 | 2 | -19.69 | 0.02 |
| 1 | GM | 05-19-2011 | 13:24:57 | 11 | 2 | -18.69 | 1.45 |
| 1 | GM | 05-19-2011 | 13:28:09 | 11 | 2 | -17.69 | 24.37 |
| 1 | GM | 05-19-2011 | 13:31:20 | 11 | 2 | -16.69 | 28.12 |
| 1 | GM | 05-19-2011 | 13:34:33 | 11 | 2 | -15.69 | 14.78 |
| 1 | GM | 05-19-2011 | 13:37:45 | 11 | 2 | -14.69 | 9.08 |
| 1 | GM | 05-19-2011 | 13:41:01 | 11 | 2 | -13.69 | 35.74 |
| 1 | GM | 05-19-2011 | 13:44:16 | 11 | 2 | -12.69 | 9.72 |
| 1 | GM | 05-19-2011 | 13:47:37 | 11 | 2 | -11.69 | 56.4 |
| 1 | GM | 05-19-2011 | 13:51:07 | 11 | 2 | -10.69 | 33.12 |
| 1 | GM | 05-19-2011 | 13:54:20 | 11 | 2 | -9.69 | 6.55 |
| 1 | GM | 05-19-2011 | 13:57:47 | 11 | 2 | -8.69 | 1.67 |
| 1 | GM | 05-19-2011 | 14:00:58 | 11 | 2 | -7.69 | 0.24 |
| 1 | GM | 05-19-2011 | 14:04:11 | 11 | 2 | -6.69 | 0.01 |
| 1 | GM | 05-19-2011 | 14:07:23 | 11 | 2 | -5.69 | 0.14 |
| 1 | GM | 05-19-2011 | 14:10:39 | 11 | 2 | -4.69 | 0.09 |
| 1 | GM | 05-19-2011 | 14:13:54 | 11 | 2 | -3.69 | 0.19 |
| 1 | GM | 05-19-2011 | 14:17:10 | 11 | 2 | -2.69 | 0.17 |
| 1 | GM | 05-19-2011 | 14:20:23 | 11 | 2 | -1.69 | 0.01 |

# Appendix Table B12 – VPU 12

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-19-2011 | 14:24:42 | 12 | 1 | -22.69 | 0.01 |
| 1 | GM | 05-19-2011 | 14:27:56 | 12 | 1 | -21.69 | 0.06 |
| 1 | GM | 05-19-2011 | 14:31:16 | 12 | 1 | -20.69 | 0 |
| 1 | GM | 05-19-2011 | 14:34:28 | 12 | 1 | -19.69 | 0.12 |
| 1 | GM | 05-19-2011 | 14:37:40 | 12 | 1 | -18.69 | 2.31 |
| 1 | GM | 05-19-2011 | 14:41:07 | 12 | 1 | -17.69 | 29.82 |
| 1 | GM | 05-19-2011 | 14:44:26 | 12 | 1 | -16.69 | 99.06 |
| 1 | GM | 05-23-2011 | 08:19:56 | 12 | 1 | -15.69 | 49.82 |
| 1 | GM | 05-23-2011 | 08:23:09 | 12 | 1 | -14.69 | 17.52 |
| 1 | GM | 05-23-2011 | 08:26:29 | 12 | 1 | -13.69 | 3.16 |
| 1 | GM | 05-23-2011 | 08:29:43 | 12 | 1 | -12.69 | 10.06 |
| 1 | GM | 05-23-2011 | 08:32:56 | 12 | 1 | -11.69 | 34.45 |
| 1 | GM | 05-23-2011 | 08:36:10 | 12 | 1 | -10.69 | 18.81 |
| 1 | GM | 05-23-2011 | 08:39:28 | 12 | 1 | -9.69 | 5.23 |
| 1 | GM | 05-23-2011 | 08:42:44 | 12 | 1 | -8.69 | 0.41 |
| 1 | GM | 05-23-2011 | 08:46:00 | 12 | 1 | -7.69 | 0.04 |
| 1 | GM | 05-23-2011 | 08:49:14 | 12 | 1 | -6.69 | 0.1 |
| 1 | GM | 05-23-2011 | 08:52:26 | 12 | 1 | -5.69 | 0 |
| 1 | GM | 05-23-2011 | 08:55:39 | 12 | 1 | -4.69 | 0 |
| 1 | GM | 05-23-2011 | 08:58:51 | 12 | 1 | -3.69 | 0.16 |
| 1 | GM | 05-23-2011 | 09:02:02 | 12 | 1 | -2.69 | 0 |
| 1 | GM | 05-23-2011 | 09:05:15 | 12 | 1 | -1.69 | 0.09 |
| 1 | GM | 05-23-2011 | 09:11:02 | 12 | 2 | -22.69 | 0 |
| 1 | GM | 05-23-2011 | 09:14:45 | 12 | 2 | -21.69 | 0 |
| 1 | GM | 05-23-2011 | 09:17:59 | 12 | 2 | -20.69 | 0.09 |
| 1 | GM | 05-23-2011 | 09:21:12 | 12 | 2 | -19.69 | 0.19 |
| 1 | GM | 05-23-2011 | 09:24:24 | 12 | 2 | -18.69 | 0.91 |
| 1 | GM | 05-23-2011 | 09:27:37 | 12 | 2 | -17.69 | 32.81 |
| 1 | GM | 05-23-2011 | 09:30:49 | 12 | 2 | -16.69 | 63.83 |
| 1 | GM | 05-23-2011 | 09:34:04 | 12 | 2 | -15.69 | 105.6 |
| 1 | GM | 05-23-2011 | 09:37:18 | 12 | 2 | -14.69 | 321.9 |
| 1 | GM | 05-23-2011 | 09:40:32 | 12 | 2 | -13.69 | 35.27 |
| 1 | GM | 05-23-2011 | 09:43:46 | 12 | 2 | -12.69 | 7.8 |
| 1 | GM | 05-23-2011 | 09:46:59 | 12 | 2 | -11.69 | 53.65 |
| 1 | GM | 05-23-2011 | 09:50:10 | 12 | 2 | -10.69 | 62.47 |
| 1 | GM | 05-23-2011 | 09:53:23 | 12 | 2 | -9.69 | 29.88 |
| 1 | GM | 05-23-2011 | 09:56:34 | 12 | 2 | -8.69 | 2.51 |
| 1 | GM | 05-23-2011 | 09:59:45 | 12 | 2 | -7.69 | 0.41 |
| 1 | GM | 05-23-2011 | 10:02:58 | 12 | 2 | -6.69 | 0.01 |
| 1 | GM | 05-23-2011 | 10:06:08 | 12 | 2 | -5.69 | 0 |
| 1 | GM | 05-23-2011 | 10:09:18 | 12 | 2 | -4.69 | 0 |
| 1 | GM | 05-23-2011 | 10:12:29 | 12 | 2 | -3.69 | 0.01 |
| 1 | GM | 05-23-2011 | 10:15:41 | 12 | 2 | -2.69 | 0 |
| 1 | GM | 05-23-2011 | 10:18:55 | 12 | 2 | -1.69 | 0.16 |

# Appendix Table B13 – VPU 13

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-23-2011 | 10:24:06 | 13 | 1 | -22.69 | 0.03 |
| 1 | GM | 05-23-2011 | 10:28:02 | 13 | 1 | -21.69 | 0 |
| 1 | GM | 05-23-2011 | 10:31:18 | 13 | 1 | -20.69 | 0 |
| 1 | GM | 05-23-2011 | 10:34:32 | 13 | 1 | -19.69 | 0 |
| 1 | GM | 05-23-2011 | 10:37:45 | 13 | 1 | -18.69 | 0 |
| 1 | GM | 05-23-2011 | 10:41:01 | 13 | 1 | -19.69 | 1.06 |
| 1 | GM | 05-23-2011 | 10:44:15 | 13 | 1 | -18.69 | 10.27 |
| 1 | GM | 05-23-2011 | 12:05:57 | 13 | 1 | -17.69 | 23.42 |
| 1 | GM | 05-23-2011 | 12:10:30 | 13 | 1 | -16.69 | 13.56 |
| 1 | GM | 05-23-2011 | 12:14:16 | 13 | 1 | -13.69 | 18.49 |
| 1 | GM | 05-23-2011 | 12:17:40 | 13 | 1 | -12.69 | 11.65 |
| 1 | GM | 05-23-2011 | 12:20:52 | 13 | 1 | -11.69 | 3.94 |
| 1 | GM | 05-23-2011 | 12:24:09 | 13 | 1 | -10.69 | 3.38 |
| 1 | GM | 05-23-2011 | 12:27:23 | 13 | 1 | -9.69 | 1.64 |
| 1 | GM | 05-23-2011 | 12:30:36 | 13 | 1 | -8.69 | 0.18 |
| 1 | GM | 05-23-2011 | 12:33:48 | 13 | 1 | -7.69 | 0 |
| 1 | GM | 05-23-2011 | 12:37:03 | 13 | 1 | -6.69 | 0 |
| 1 | GM | 05-23-2011 | 12:40:15 | 13 | 1 | -5.69 | 0.06 |
| 1 | GM | 05-23-2011 | 12:43:29 | 13 | 1 | -4.69 | 0 |
| 1 | GM | 05-23-2011 | 12:46:44 | 13 | 1 | -3.69 | 0.07 |
| 1 | GM | 05-23-2011 | 12:49:56 | 13 | 1 | -2.69 | 0 |
| 1 | GM | 05-23-2011 | 12:53:10 | 13 | 1 | -1.69 | 0.08 |
| 1 | GM | 05-23-2011 | 12:58:36 | 13 | 2 | -22.69 | 0 |
| 1 | GM | 05-23-2011 | 13:01:48 | 13 | 2 | -21.69 | 0.34 |
| 1 | GM | 05-23-2011 | 13:05:01 | 13 | 2 | -20.69 | 0 |
| 1 | GM | 05-23-2011 | 13:08:16 | 13 | 2 | -19.69 | 0.05 |
| 1 | GM | 05-23-2011 | 13:11:27 | 13 | 2 | -18.69 | 0.07 |
| 1 | GM | 05-23-2011 | 13:14:42 | 13 | 2 | -17.69 | 0 |
| 1 | GM | 05-23-2011 | 13:17:56 | 13 | 2 | -16.69 | 0.34 |
| 1 | GM | 05-23-2011 | 13:21:10 | 13 | 2 | -15.69 | 0.17 |
| 1 | GM | 05-23-2011 | 13:24:28 | 13 | 2 | -14.69 | 0.83 |
| 1 | GM | 05-23-2011 | 13:27:42 | 13 | 2 | -13.69 | 0.41 |
| 1 | GM | 05-23-2011 | 13:30:58 | 13 | 2 | -12.69 | 1.21 |
| 1 | GM | 05-23-2011 | 13:34:38 | 13 | 2 | -11.69 | 1.91 |
| 1 | GM | 05-23-2011 | 13:37:51 | 13 | 2 | -10.69 | 7.21 |
| 1 | GM | 05-23-2011 | 13:41:03 | 13 | 2 | -9.69 | 3.54 |
| 1 | GM | 05-23-2011 | 13:44:22 | 13 | 2 | -8.69 | 0.26 |
| 1 | GM | 05-23-2011 | 13:47:35 | 13 | 2 | -7.69 | 0 |
| 1 | GM | 05-23-2011 | 13:51:31 | 13 | 2 | -6.69 | 0 |
| 1 | GM | 05-23-2011 | 13:54:45 | 13 | 2 | -5.69 | 0 |
| 1 | GM | 05-23-2011 | 13:57:58 | 13 | 2 | -4.69 | 0.01 |
| 1 | GM | 05-23-2011 | 14:01:14 | 13 | 2 | -3.69 | 0 |
| 1 | GM | 05-23-2011 | 14:04:30 | 13 | 2 | -2.69 | 0.07 |
| 1 | GM | 05-23-2011 | 14:07:43 | 13 | 2 | -1.69 | 0.09 |
| 1 | GM | 05-23-2011 | 14:12:27 | 13 | 2 | -1.69 | 0.03 |

# Appendix Table B14 - VPU14

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-23-2011 | 14:16:33 | 14 | 1 | -22.69 | 0.14 |
| 1 | GM | 05-23-2011 | 14:19:48 | 14 | 1 | -21.69 | 0 |
| 1 | GM | 05-23-2011 | 14:23:02 | 14 | 1 | -20.69 | 0.16 |
| 1 | GM | 05-23-2011 | 14:26:20 | 14 | 1 | -19.69 | 0.01 |
| 1 | GM | 05-23-2011 | 14:29:36 | 14 | 1 | -18.69 | 1.13 |
| 1 | GM | 05-23-2011 | 14:32:49 | 14 | 1 | -17.69 | 5.2 |
| 1 | GM | 05-23-2011 | 14:36:01 | 14 | 1 | -16.69 | 9.2 |
| 1 | GM | 05-23-2011 | 14:39:20 | 14 | 1 | -15.69 | 44.35 |
| 1 | GM | 05-23-2011 | 14:42:35 | 14 | 1 | -14.69 | 16.81 |
| 1 | GM | 05-23-2011 | 14:45:46 | 14 | 1 | -13.69 | 3.96 |
| 1 | GM | 05-23-2011 | 14:49:00 | 14 | 1 | -12.69 | 5.31 |
| 1 | GM | 05-23-2011 | 14:52:13 | 14 | 1 | -11.69 | 5.69 |
| 1 | GM | 05-23-2011 | 14:55:26 | 14 | 1 | -10.69 | 2.51 |
| 1 | GM | 05-23-2011 | 14:58:41 | 14 | 1 | -9.69 | 0.41 |
| 1 | GM | 05-23-2011 | 15:01:52 | 14 | 1 | -8.69 | 0.12 |
| 1 | GM | 05-23-2011 | 15:05:06 | 14 | 1 | -7.69 | 0.02 |
| 1 | GM | 05-23-2011 | 15:08:18 | 14 | 1 | -6.69 | 0 |
| 1 | GM | 05-23-2011 | 15:11:34 | 14 | 1 | -5.69 | 0 |
| 1 | GM | 05-23-2011 | 15:14:54 | 14 | 1 | -4.69 | 0.14 |
| 1 | GM | 05-23-2011 | 15:18:07 | 14 | 1 | -3.69 | 0.02 |
| 1 | GM | 05-23-2011 | 15:21:20 | 14 | 1 | -2.69 | 0 |
| 1 | GM | 05-23-2011 | 15:24:35 | 14 | 1 | -1.69 | 0 |
| 1 | GM | 05-24-2011 | 07:20:40 | 14 | 2 | -22.69 | 0 |
| 1 | GM | 05-24-2011 | 07:24:06 | 14 | 2 | -21.69 | 0.04 |
| 1 | GM | 05-24-2011 | 07:27:23 | 14 | 2 | -20.69 | 0.01 |
| 1 | GM | 05-24-2011 | 07:30:37 | 14 | 2 | -19.69 | 0 |
| 1 | GM | 05-24-2011 | 07:33:49 | 14 | 2 | -18.69 | 0.78 |
| 1 | GM | 05-24-2011 | 07:37:04 | 14 | 2 | -17.69 | 13.14 |
| 1 | GM | 05-24-2011 | 07:40:17 | 14 | 2 | -16.69 | 28.99 |
| 1 | GM | 05-24-2011 | 07:43:40 | 14 | 2 | -15.69 | 203.8 |
| 1 | GM | 05-24-2011 | 07:46:56 | 14 | 2 | -14.69 | 141.1 |
| 1 | GM | 05-24-2011 | 07:50:09 | 14 | 2 | -13.69 | 22.88 |
| 1 | GM | 05-24-2011 | 07:53:23 | 14 | 2 | -12.69 | 45.5 |
| 1 | GM | 05-24-2011 | 07:56:36 | 14 | 2 | -11.69 | 21.62 |
| 1 | GM | 05-24-2011 | 07:59:51 | 14 | 2 | -10.69 | 11.14 |
| 1 | GM | 05-24-2011 | 08:03:04 | 14 | 2 | -9.69 | 2.1 |
| 1 | GM | 05-24-2011 | 08:06:18 | 14 | 2 | -8.69 | 0.07 |
| 1 | GM | 05-24-2011 | 08:09:33 | 14 | 2 | -7.69 | 0 |
| 1 | GM | 05-24-2011 | 08:12:47 | 14 | 2 | -6.69 | 0 |
| 1 | GM | 05-24-2011 | 08:16:00 | 14 | 2 | -5.69 | 0.13 |
| 1 | GM | 05-24-2011 | 08:19:10 | 14 | 2 | -4.69 | 0.07 |
| 1 | GM | 05-24-2011 | 08:22:22 | 14 | 2 | -3.69 | 0 |
| 1 | GM | 05-24-2011 | 08:25:42 | 14 | 2 | -2.69 | 0.07 |
| 1 | GM | 05-24-2011 | 08:28:55 | 14 | 2 | -1.69 | 0.01 |

# Appendix Table B15 - VPU15

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-24-2011 | 08:33:15 | 15 | 1 | -22.69 | 0.06 |
| 1 | GM | 05-24-2011 | 08:36:27 | 15 | 1 | -21.69 | 0.17 |
| 1 | GM | 05-24-2011 | 08:39:45 | 15 | 1 | -20.69 | 0.04 |
| 1 | GM | 05-24-2011 | 08:42:57 | 15 | 1 | -19.69 | 0.01 |
| 1 | GM | 05-24-2011 | 08:46:11 | 15 | 1 | -18.69 | 0.54 |
| 1 | GM | 05-24-2011 | 08:49:25 | 15 | 1 | -17.69 | 15.84 |
| 1 | GM | 05-24-2011 | 08:52:38 | 15 | 1 | -16.69 | 64.96 |
| 1 | GM | 05-24-2011 | 08:55:52 | 15 | 1 | -15.69 | 43.58 |
| 1 | GM | 05-24-2011 | 08:59:06 | 15 | 1 | -14.69 | 26.3 |
| 1 | GM | 05-24-2011 | 09:02:20 | 15 | 1 | -13.69 | 145.4 |
| 1 | GM | 05-24-2011 | 09:05:35 | 15 | 1 | -12.69 | 273.9 |
| 1 | GM | 05-24-2011 | 09:08:50 | 15 | 1 | -11.69 | 19.16 |
| 1 | GM | 05-24-2011 | 09:12:03 | 15 | 1 | -10.69 | 1.51 |
| 1 | GM | 05-24-2011 | 09:15:16 | 15 | 1 | -9.69 | 0.05 |
| 1 | GM | 05-24-2011 | 09:18:29 | 15 | 1 | -8.69 | 0.01 |
| 1 | GM | 05-24-2011 | 09:21:40 | 15 | 1 | -7.69 | 0 |
| 1 | GM | 05-24-2011 | 09:24:51 | 15 | 1 | -6.69 | 0.15 |
| 1 | GM | 05-24-2011 | 09:28:09 | 15 | 1 | -5.69 | 0.08 |
| 1 | GM | 05-24-2011 | 09:31:22 | 15 | 1 | -4.69 | 0.05 |
| 1 | GM | 05-24-2011 | 09:34:39 | 15 | 1 | -3.69 | 0 |
| 1 | GM | 05-24-2011 | 09:37:57 | 15 | 1 | -2.69 | 0.26 |
| 1 | GM | 05-24-2011 | 09:42:14 | 15 | 1 | -1.69 | 0.21 |
| 1 | GM | 05-24-2011 | 09:45:39 | 15 | 2 | -22.69 | 0.08 |
| 1 | GM | 05-24-2011 | 09:48:53 | 15 | 2 | -21.69 | 0.02 |
| 1 | GM | 05-24-2011 | 09:52:05 | 15 | 2 | -20.69 | 0.09 |
| 1 | GM | 05-24-2011 | 09:55:18 | 15 | 2 | -19.69 | 0.16 |
| 1 | GM | 05-24-2011 | 09:58:28 | 15 | 2 | -18.69 | 0.12 |
| 1 | GM | 05-24-2011 | 10:01:42 | 15 | 2 | -17.69 | 8.98 |
| 1 | GM | 05-24-2011 | 10:05:07 | 15 | 2 | -16.69 | 37.88 |
| 1 | GM | 05-24-2011 | 10:08:20 | 15 | 2 | -15.69 | 62.77 |
| 1 | GM | 05-24-2011 | 10:11:35 | 15 | 2 | -14.69 | 59.16 |
| 1 | GM | 05-24-2011 | 10:14:54 | 15 | 2 | -13.69 | 37.91 |
| 1 | GM | 05-24-2011 | 10:18:08 | 15 | 2 | -12.69 | 33.44 |
| 1 | GM | 05-24-2011 | 10:21:20 | 15 | 2 | -11.69 | 4.09 |
| 1 | GM | 05-24-2011 | 10:24:32 | 15 | 2 | -10.69 | 0.37 |
| 1 | GM | 05-24-2011 | 10:27:49 | 15 | 2 | -9.69 | 0.02 |
| 1 | GM | 05-24-2011 | 10:31:15 | 15 | 2 | -8.69 | 0.03 |
| 1 | GM | 05-24-2011 | 10:34:28 | 15 | 2 | -7.69 | 0 |
| 1 | GM | 05-24-2011 | 10:37:47 | 15 | 2 | -6.69 | 0 |
| 1 | GM | 05-24-2011 | 10:41:03 | 15 | 2 | -5.69 | 0 |
| 1 | GM | 05-24-2011 | 10:44:26 | 15 | 2 | -4.69 | 0 |
| 1 | GM | 05-24-2011 | 10:47:38 | 15 | 2 | -3.69 | 0 |
| 1 | GM | 05-24-2011 | 10:50:54 | 15 | 2 | -2.69 | 0.02 |
| 1 | GM | 05-24-2011 | 12:06:46 | 15 | 2 | -1.69 | 0.08 |

# Appendix Table B16 - VPU16

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-24-2011 | 12:10:07 | 16 | 1 | -22.69 | 0.29 |
| 1 | GM | 05-24-2011 | 12:13:19 | 16 | 1 | -21.69 | 0.01 |
| 1 | GM | 05-24-2011 | 12:16:35 | 16 | 1 | -20.69 | 0.01 |
| 1 | GM | 05-24-2011 | 12:19:47 | 16 | 1 | -19.69 | 0.2 |
| 1 | GM | 05-24-2011 | 12:23:00 | 16 | 1 | -18.69 | 1.32 |
| 1 | GM | 05-24-2011 | 12:26:19 | 16 | 1 | -17.69 | 9.49 |
| 1 | GM | 05-24-2011 | 12:29:32 | 16 | 1 | -16.69 | 14.06 |
| 1 | GM | 05-24-2011 | 12:32:50 | 16 | 1 | -15.69 | 2.81 |
| 1 | GM | 05-24-2011 | 12:36:03 | 16 | 1 | -14.69 | 5.85 |
| 1 | GM | 05-24-2011 | 12:39:22 | 16 | 1 | -13.69 | 28.96 |
| 1 | GM | 05-24-2011 | 12:42:37 | 16 | 1 | -12.69 | 8.97 |
| 1 | GM | 05-24-2011 | 12:45:54 | 16 | 1 | -11.69 | 2.04 |
| 1 | GM | 05-24-2011 | 12:49:05 | 16 | 1 | -10.69 | 0.23 |
| 1 | GM | 05-24-2011 | 12:52:17 | 16 | 1 | -9.69 | 0.32 |
| 1 | GM | 05-24-2011 | 12:55:33 | 16 | 1 | -8.69 | 0 |
| 1 | GM | 05-24-2011 | 12:58:47 | 16 | 1 | -7.69 | 0.01 |
| 1 | GM | 05-24-2011 | 13:02:03 | 16 | 1 | -6.69 | 0 |
| 1 | GM | 05-24-2011 | 13:05:14 | 16 | 1 | -5.69 | 0.01 |
| 1 | GM | 05-24-2011 | 13:08:26 | 16 | 1 | -4.69 | 0 |
| 1 | GM | 05-24-2011 | 13:11:45 | 16 | 1 | -3.69 | 0.01 |
| 1 | GM | 05-24-2011 | 13:15:01 | 16 | 1 | -2.69 | 0.02 |
| 1 | GM | 05-24-2011 | 13:18:19 | 16 | 1 | -1.69 | 0.09 |
| 1 | GM | 05-24-2011 | 13:22:03 | 16 | 2 | -22.69 | 0.03 |
| 1 | GM | 05-24-2011 | 13:25:24 | 16 | 2 | -21.69 | 0.08 |
| 1 | GM | 05-24-2011 | 13:28:46 | 16 | 2 | -20.69 | 0.01 |
| 1 | GM | 05-24-2011 | 13:32:04 | 16 | 2 | -19.69 | 0.24 |
| 1 | GM | 05-24-2011 | 13:35:25 | 16 | 2 | -18.69 | 5.34 |
| 1 | GM | 05-24-2011 | 13:38:43 | 16 | 2 | -17.69 | 76.2 |
| 1 | GM | 05-24-2011 | 13:41:59 | 16 | 2 | -16.69 | 110.1 |
| 1 | GM | 05-24-2011 | 13:45:19 | 16 | 2 | -15.69 | 17.45 |
| 1 | GM | 05-24-2011 | 13:48:38 | 16 | 2 | -14.69 | 10.22 |
| 1 | GM | 05-24-2011 | 13:51:56 | 16 | 2 | -13.69 | 23.36 |
| 1 | GM | 05-24-2011 | 13:55:12 | 16 | 2 | -12.69 | 6.57 |
| 1 | GM | 05-24-2011 | 13:58:26 | 16 | 2 | -11.69 | 30.25 |
| 1 | GM | 05-24-2011 | 14:01:43 | 16 | 2 | -10.69 | 21.2 |
| 1 | GM | 05-24-2011 | 14:04:57 | 16 | 2 | -9.69 | 1.67 |
| 1 | GM | 05-24-2011 | 14:08:09 | 16 | 2 | -8.69 | 0 |
| 1 | GM | 05-24-2011 | 14:11:22 | 16 | 2 | -7.69 | 0.01 |
| 1 | GM | 05-24-2011 | 14:14:33 | 16 | 2 | -6.69 | 0.08 |
| 1 | GM | 05-24-2011 | 14:17:45 | 16 | 2 | -5.69 | 0.04 |
| 1 | GM | 05-24-2011 | 14:20:58 | 16 | 2 | -4.69 | 0 |
| 1 | GM | 05-24-2011 | 14:24:09 | 16 | 2 | -3.69 | 0 |
| 1 | GM | 05-24-2011 | 14:27:48 | 16 | 2 | -2.69 | 0 |
| 1 | GM | 05-24-2011 | 14:31:03 | 16 | 2 | -1.69 | 0.18 |

# Appendix Table B17 - VPU17

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-24-2011 | 14:36:14 | 17 | 1 | -22.69 | 0.12 |
| 1 | GM | 05-24-2011 | 14:39:25 | 17 | 1 | -21.69 | 0 |
| 1 | GM | 05-24-2011 | 14:42:37 | 17 | 1 | -20.69 | 0 |
| 1 | GM | 05-24-2011 | 14:45:51 | 17 | 1 | -19.69 | 0.02 |
| 1 | GM | 05-24-2011 | 14:49:01 | 17 | 1 | -18.69 | 0.14 |
| 1 | GM | 05-24-2011 | 14:52:13 | 17 | 1 | -17.69 | 2.48 |
| 1 | GM | 05-24-2011 | 14:55:25 | 17 | 1 | -16.69 | 6.99 |
| 1 | GM | 05-24-2011 | 14:58:36 | 17 | 1 | -15.69 | 41.84 |
| 1 | GM | 05-24-2011 | 15:02:02 | 17 | 1 | -14.69 | 140.6 |
| 1 | GM | 05-24-2011 | 15:05:15 | 17 | 1 | -13.69 | 88.14 |
| 1 | GM | 05-24-2011 | 15:08:31 | 17 | 1 | -12.69 | 8.91 |
| 1 | GM | 05-24-2011 | 15:11:42 | 17 | 1 | -11.69 | 0.67 |
| 1 | GM | 05-24-2011 | 15:14:55 | 17 | 1 | -10.69 | 0.72 |
| 1 | GM | 05-24-2011 | 15:18:09 | 17 | 1 | -9.69 | 1.15 |
| 1 | GM | 05-24-2011 | 15:21:27 | 17 | 1 | -8.69 | 0.14 |
| 1 | GM | 05-24-2011 | 15:24:41 | 17 | 1 | -7.69 | 0.09 |
| 1 | GM | 05-24-2011 | 15:27:52 | 17 | 1 | -6.69 | 0 |
| 1 | GM | 05-24-2011 | 15:31:05 | 17 | 1 | -5.69 | 0.18 |
| 1 | GM | 05-24-2011 | 15:34:17 | 17 | 1 | -4.69 | 0 |
| 1 | GM | 05-24-2011 | 15:37:31 | 17 | 1 | -3.69 | 0.01 |
| 1 | GM | 05-24-2011 | 15:41:04 | 17 | 1 | -2.69 | 0 |
| 1 | GM | 05-24-2011 | 15:44:28 | 17 | 1 | -1.69 | 0.03 |
| 1 | GM | 05-24-2011 | 15:44:42 | 17 | 1 | -1.69 | 0.01 |
| 1 | GM | 05-25-2011 | 07:31:12 | 17 | 2 | -22.69 | 0 |
| 1 | GM | 05-25-2011 | 07:34:25 | 17 | 2 | -21.69 | 0 |
| 1 | GM | 05-25-2011 | 07:37:38 | 17 | 2 | -20.69 | 0.02 |
| 1 | GM | 05-25-2011 | 07:40:54 | 17 | 2 | -19.69 | 0 |
| 1 | GM | 05-25-2011 | 07:44:06 | 17 | 2 | -18.69 | 4.02 |
| 1 | GM | 05-25-2011 | 07:47:21 | 17 | 2 | -17.69 | 56.14 |
| 1 | GM | 05-25-2011 | 07:50:34 | 17 | 2 | -16.69 | 105.2 |
| 1 | GM | 05-25-2011 | 07:53:47 | 17 | 2 | -15.69 | 190.8 |
| 1 | GM | 05-25-2011 | 07:57:00 | 17 | 2 | -14.69 | 1095 |
| 1 | GM | 05-25-2011 | 08:00:13 | 17 | 2 | -13.69 | 680.7 |
| 1 | GM | 05-25-2011 | 08:03:25 | 17 | 2 | -12.69 | 27.29 |
| 1 | GM | 05-25-2011 | 08:06:43 | 17 | 2 | -11.69 | 6.23 |
| 1 | GM | 05-25-2011 | 08:09:55 | 17 | 2 | -10.69 | 3.09 |
| 1 | GM | 05-25-2011 | 08:13:09 | 17 | 2 | -9.69 | 5.43 |
| 1 | GM | 05-25-2011 | 08:16:21 | 17 | 2 | -8.69 | 1.18 |
| 1 | GM | 05-25-2011 | 08:19:34 | 17 | 2 | -7.69 | 0.06 |
| 1 | GM | 05-25-2011 | 08:22:46 | 17 | 2 | -6.69 | 0.02 |
| 1 | GM | 05-25-2011 | 08:26:02 | 17 | 2 | -5.69 | 0.16 |
| 1 | GM | 05-25-2011 | 08:29:14 | 17 | 2 | -4.69 | 0.13 |
| 1 | GM | 05-25-2011 | 08:32:26 | 17 | 2 | -3.69 | 0 |
| 1 | GM | 05-25-2011 | 08:35:38 | 17 | 2 | -2.69 | 0.17 |
| 1 | GM | 05-25-2011 | 08:38:50 | 17 | 2 | -1.69 | 0.1 |

# Appendix Table B18 - VPU18

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-25-2011 | 08:42:57 | 18 | 1 | -22.69 | 0.04 |
| 1 | GM | 05-25-2011 | 08:46:12 | 18 | 1 | -21.69 | 0 |
| 1 | GM | 05-25-2011 | 08:49:27 | 18 | 1 | -20.69 | 0 |
| 1 | GM | 05-25-2011 | 08:52:38 | 18 | 1 | -19.69 | 0.07 |
| 1 | GM | 05-25-2011 | 08:55:54 | 18 | 1 | -18.69 | 0.25 |
| 1 | GM | 05-25-2011 | 08:59:10 | 18 | 1 | -17.69 | 4 |
| 1 | GM | 05-25-2011 | 09:02:24 | 18 | 1 | -16.69 | 7.78 |
| 1 | GM | 05-25-2011 | 09:05:40 | 18 | 1 | -15.69 | 17.33 |
| 1 | GM | 05-25-2011 | 09:08:51 | 18 | 1 | -14.69 | 7.28 |
| 1 | GM | 05-25-2011 | 09:12:44 | 18 | 1 | -13.69 | 2.7 |
| 1 | GM | 05-25-2011 | 09:15:59 | 18 | 1 | -12.69 | 3.04 |
| 1 | GM | 05-25-2011 | 09:19:13 | 18 | 1 | -11.69 | 1.57 |
| 1 | GM | 05-25-2011 | 09:22:26 | 18 | 1 | -10.69 | 0.85 |
| 1 | GM | 05-25-2011 | 09:25:39 | 18 | 1 | -9.69 | 0.15 |
| 1 | GM | 05-25-2011 | 09:28:51 | 18 | 1 | -8.69 | 0 |
| 1 | GM | 05-25-2011 | 09:32:05 | 18 | 1 | -7.69 | 0 |
| 1 | GM | 05-25-2011 | 09:35:18 | 18 | 1 | -6.69 | 0 |
| 1 | GM | 05-25-2011 | 09:38:31 | 18 | 1 | -5.69 | 0.04 |
| 1 | GM | 05-25-2011 | 09:41:43 | 18 | 1 | -4.69 | 0.05 |
| 1 | GM | 05-25-2011 | 09:44:56 | 18 | 1 | -3.69 | 0.04 |
| 1 | GM | 05-25-2011 | 09:48:08 | 18 | 1 | -2.69 | 0 |
| 1 | GM | 05-25-2011 | 09:51:23 | 18 | 1 | -1.69 | 0 |
| 1 | GM | 05-25-2011 | 09:55:46 | 18 | 2 | -22.69 | 0.11 |
| 1 | GM | 05-25-2011 | 09:58:58 | 18 | 2 | -21.69 | 0 |
| 1 | GM | 05-25-2011 | 10:02:14 | 18 | 2 | -20.69 | 0.01 |
| 1 | GM | 05-25-2011 | 10:05:29 | 18 | 2 | -19.69 | 0.1 |
| 1 | GM | 05-25-2011 | 10:08:44 | 18 | 2 | -18.69 | 4.76 |
| 1 | GM | 05-25-2011 | 10:11:57 | 18 | 2 | -17.69 | 94.62 |
| 1 | GM | 05-25-2011 | 10:15:12 | 18 | 2 | -16.69 | 112.5 |
| 1 | GM | 05-25-2011 | 10:18:30 | 18 | 2 | -15.69 | 1298 |
| 1 | GM | 05-25-2011 | 10:21:44 | 18 | 2 | -14.69 | 65.58 |
| 1 | GM | 05-25-2011 | 10:25:00 | 18 | 2 | -13.69 | 127.6 |
| 1 | GM | 05-25-2011 | 10:28:15 | 18 | 2 | -12.69 | 53.56 |
| 1 | GM | 05-25-2011 | 10:31:28 | 18 | 2 | -11.69 | 12.88 |
| 1 | GM | 05-25-2011 | 10:35:44 | 18 | 2 | -10.69 | 4.42 |
| 1 | GM | 05-25-2011 | 10:38:54 | 18 | 2 | -9.69 | 1.46 |
| 1 | GM | 05-25-2011 | 10:42:05 | 18 | 2 | -8.69 | 0.3 |
| 1 | GM | 05-25-2011 | 10:45:18 | 18 | 2 | -7.69 | 0.01 |
| 1 | GM | 05-25-2011 | 11:54:10 | 18 | 2 | -6.69 | 0.01 |
| 1 | GM | 05-25-2011 | 12:00:55 | 18 | 2 | -5.69 | 0 |
| 1 | GM | 05-25-2011 | 12:04:09 | 18 | 2 | -4.69 | 0.06 |
| 1 | GM | 05-25-2011 | 12:07:23 | 18 | 2 | -3.69 | 0.06 |
| 1 | GM | 05-25-2011 | 12:10:34 | 18 | 2 | -2.69 | 0.1 |
| 1 | GM | 05-25-2011 | 12:16:00 | 18 | 2 | -1.69 | 0 |

# Appendix Table B19 - VPU19

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-25-2011 | 12:19:23 | 19 | 1 | -22.69 | 0 |
| 1 | GM | 05-25-2011 | 12:22:44 | 19 | 1 | -21.69 | 0 |
| 1 | GM | 05-25-2011 | 12:25:58 | 19 | 1 | -20.69 | 0 |
| 1 | GM | 05-25-2011 | 12:29:14 | 19 | 1 | -19.69 | 0.2 |
| 1 | GM | 05-25-2011 | 12:32:30 | 19 | 1 | -18.69 | 0.09 |
| 1 | GM | 05-25-2011 | 12:35:44 | 19 | 1 | -17.69 | 4.02 |
| 1 | GM | 05-25-2011 | 12:38:57 | 19 | 1 | -16.69 | 2.69 |
| 1 | GM | 05-25-2011 | 12:42:10 | 19 | 1 | -15.69 | 0.12 |
| 1 | GM | 05-25-2011 | 12:45:22 | 19 | 1 | -14.69 | 0 |
| 1 | GM | 05-25-2011 | 12:48:36 | 19 | 1 | -13.69 | 0.06 |
| 1 | GM | 05-25-2011 | 12:51:50 | 19 | 1 | -12.69 | 0.01 |
| 1 | GM | 05-25-2011 | 12:55:03 | 19 | 1 | -11.69 | 0.13 |
| 1 | GM | 05-25-2011 | 12:58:18 | 19 | 1 | -10.69 | 1.04 |
| 1 | GM | 05-25-2011 | 13:01:30 | 19 | 1 | -9.69 | 1.99 |
| 1 | GM | 05-25-2011 | 13:04:41 | 19 | 1 | -8.69 | 1.08 |
| 1 | GM | 05-25-2011 | 13:07:53 | 19 | 1 | -7.69 | 0.02 |
| 1 | GM | 05-25-2011 | 13:11:07 | 19 | 1 | -6.69 | 0.11 |
| 1 | GM | 05-25-2011 | 13:14:26 | 19 | 1 | -5.69 | 0 |
| 1 | GM | 05-25-2011 | 13:17:40 | 19 | 1 | -4.69 | 0 |
| 1 | GM | 05-25-2011 | 13:20:53 | 19 | 1 | -3.69 | 0.12 |
| 1 | GM | 05-25-2011 | 13:24:06 | 19 | 1 | -2.69 | 0.01 |
| 1 | GM | 05-25-2011 | 13:27:26 | 19 | 1 | -1.69 | 0 |
| 1 | GM | 05-25-2011 | 13:32:39 | 19 | 2 | -22.69 | 0.06 |
| 1 | GM | 05-25-2011 | 13:35:53 | 19 | 2 | -21.69 | 0.02 |
| 1 | GM | 05-25-2011 | 13:39:10 | 19 | 2 | -20.69 | 0.01 |
| 1 | GM | 05-25-2011 | 13:42:22 | 19 | 2 | -19.69 | 0 |
| 1 | GM | 05-25-2011 | 13:45:35 | 19 | 2 | -18.69 | 0.29 |
| 1 | GM | 05-25-2011 | 13:48:51 | 19 | 2 | -17.69 | 13.87 |
| 1 | GM | 05-25-2011 | 13:52:14 | 19 | 2 | -16.69 | 18.23 |
| 1 | GM | 05-25-2011 | 13:55:26 | 19 | 2 | -15.69 | 0.52 |
| 1 | GM | 05-25-2011 | 13:58:38 | 19 | 2 | -14.69 | 0.18 |
| 1 | GM | 05-25-2011 | 14:01:51 | 19 | 2 | -13.69 | 0 |
| 1 | GM | 05-25-2011 | 14:05:04 | 19 | 2 | -12.69 | 0 |
| 1 | GM | 05-25-2011 | 14:08:17 | 19 | 2 | -11.69 | 0.64 |
| 1 | GM | 05-25-2011 | 14:11:31 | 19 | 2 | -10.69 | 2.43 |
| 1 | GM | 05-25-2011 | 14:14:45 | 19 | 2 | -9.69 | 4.51 |
| 1 | GM | 05-25-2011 | 14:17:57 | 19 | 2 | -8.69 | 1.93 |
| 1 | GM | 05-25-2011 | 14:21:08 | 19 | 2 | -7.69 | 0.13 |
| 1 | GM | 05-25-2011 | 14:24:23 | 19 | 2 | -6.69 | 0 |
| 1 | GM | 05-25-2011 | 14:27:34 | 19 | 2 | -5.69 | 0.07 |
| 1 | GM | 05-25-2011 | 14:30:47 | 19 | 2 | -4.69 | 0.01 |
| 1 | GM | 05-25-2011 | 14:33:58 | 19 | 2 | -3.69 | 0 |
| 1 | GM | 05-25-2011 | 14:37:11 | 19 | 2 | -2.69 | 0.03 |
| 1 | GM | 05-25-2011 | 14:42:39 | 19 | 2 | -1.69 | 0 |

# Appendix Table B 20 - VPU 20

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-25-2011 | 14:46:06 | 20 | 1 | -22.69 | 0.01 |
| 1 | GM | 05-25-2011 | 14:49:20 | 20 | 1 | -21.69 | 0.18 |
| 1 | GM | 05-25-2011 | 14:52:31 | 20 | 1 | -20.69 | 0.07 |
| 1 | GM | 05-25-2011 | 14:55:45 | 20 | 1 | -19.69 | 0 |
| 1 | GM | 05-25-2011 | 14:58:55 | 20 | 1 | -18.69 | 0.38 |
| 1 | GM | 05-25-2011 | 15:02:08 | 20 | 1 | -17.69 | 9.76 |
| 1 | GM | 05-25-2011 | 15:05:20 | 20 | 1 | -16.69 | 9.99 |
| 1 | GM | 05-25-2011 | 15:08:33 | 20 | 1 | -15.69 | 3.9 |
| 1 | GM | 05-25-2011 | 15:11:44 | 20 | 1 | -14.69 | 4.28 |
| 1 | GM | 05-25-2011 | 15:14:59 | 20 | 1 | -13.69 | 9.12 |
| 1 | GM | 05-25-2011 | 15:18:18 | 20 | 1 | -12.69 | 3.1 |
| 1 | GM | 05-25-2011 | 15:21:36 | 20 | 1 | -11.69 | 0.37 |
| 1 | GM | 05-25-2011 | 15:24:54 | 20 | 1 | -10.69 | 0.05 |
| 1 | GM | 05-25-2011 | 15:28:11 | 20 | 1 | -9.69 | 0.02 |
| 1 | GM | 05-25-2011 | 15:31:28 | 20 | 1 | -8.69 | 0.94 |
| 1 | GM | 05-26-2011 | 07:34:48 | 20 | 1 | -7.69 | 1.61 |
| 1 | GM | 05-26-2011 | 07:38:28 | 20 | 1 | -6.69 | 0.37 |
| 1 | GM | 05-26-2011 | 07:41:41 | 20 | 1 | -5.69 | 0.07 |
| 1 | GM | 05-26-2011 | 07:45:05 | 20 | 1 | -4.69 | 0.1 |
| 1 | GM | 05-26-2011 | 07:48:17 | 20 | 1 | -3.69 | 0.12 |
| 1 | GM | 05-26-2011 | 07:51:30 | 20 | 1 | -2.69 | 0 |
| 1 | GM | 05-26-2011 | 07:54:42 | 20 | 1 | -1.69 | 0.11 |
| 1 | GM | 05-26-2011 | 07:58:53 | 20 | 2 | -22.69 | 0.02 |
| 1 | GM | 05-26-2011 | 08:02:37 | 20 | 2 | -21.69 | 0.02 |
| 1 | GM | 05-26-2011 | 08:05:51 | 20 | 2 | -20.69 | 0.21 |
| 1 | GM | 05-26-2011 | 08:09:02 | 20 | 2 | -19.69 | 1.39 |
| 1 | GM | 05-26-2011 | 08:12:16 | 20 | 2 | -18.69 | 1.55 |
| 1 | GM | 05-26-2011 | 08:15:40 | 20 | 2 | -17.69 | 11.16 |
| 1 | GM | 05-26-2011 | 08:18:53 | 20 | 2 | -16.69 | 51.33 |
| 1 | GM | 05-26-2011 | 08:22:12 | 20 | 2 | -15.69 | 28.26 |
| 1 | GM | 05-26-2011 | 08:25:24 | 20 | 2 | -14.69 | 41.86 |
| 1 | GM | 05-26-2011 | 08:28:37 | 20 | 2 | -13.69 | 73.67 |
| 1 | GM | 05-26-2011 | 08:31:50 | 20 | 2 | -12.69 | 31.01 |
| 1 | GM | 05-26-2011 | 08:35:01 | 20 | 2 | -11.69 | 2.46 |
| 1 | GM | 05-26-2011 | 08:38:13 | 20 | 2 | -10.69 | 0.02 |
| 1 | GM | 05-26-2011 | 08:41:25 | 20 | 2 | -9.69 | 1.33 |
| 1 | GM | 05-26-2011 | 08:44:42 | 20 | 2 | -8.69 | 8.69 |
| 1 | GM | 05-26-2011 | 08:47:53 | 20 | 2 | -7.69 | 14.28 |
| 1 | GM | 05-26-2011 | 08:51:06 | 20 | 2 | -6.69 | 3.69 |
| 1 | GM | 05-26-2011 | 08:54:37 | 20 | 2 | -5.69 | 0.21 |
| 1 | GM | 05-26-2011 | 08:57:49 | 20 | 2 | -4.69 | 0 |
| 1 | GM | 05-26-2011 | 09:01:02 | 20 | 2 | -3.69 | 0.19 |
| 1 | GM | 05-26-2011 | 09:04:16 | 20 | 2 | -2.69 | 0 |
| 1 | GM | 05-26-2011 | 09:07:30 | 20 | 2 | -1.69 | 0 |
| 1 | GM | 05-26-2011 | 11:52:54 | 20 | 2 | -1.69 | 0 |

# Appendix Table B 21 - VPU 21

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-16-2011 | 13:56:38 | 21 | 2 | -22.69 | 0.3 |
| 1 | GM | 06-16-2011 | 13:59:49 | 21 | 2 | -21.69 | 0.02 |
| 1 | GM | 06-16-2011 | 14:03:06 | 21 | 2 | -20.69 | 0 |
| 1 | GM | 06-16-2011 | 14:06:19 | 21 | 2 | -19.69 | 0.18 |
| 1 | GM | 06-16-2011 | 14:09:47 | 21 | 2 | -18.69 | 0.04 |
| 1 | GM | 06-16-2011 | 14:12:59 | 21 | 2 | -17.69 | 0.15 |
| 1 | GM | 06-16-2011 | 14:16:10 | 21 | 2 | -16.69 | 0.17 |
| 1 | GM | 06-16-2011 | 14:19:20 | 21 | 2 | -15.69 | 0 |
| 1 | GM | 06-16-2011 | 14:22:34 | 21 | 2 | -14.69 | 0.09 |
| 1 | GM | 06-16-2011 | 14:25:49 | 21 | 2 | -13.69 | 0.3 |
| 1 | GM | 06-16-2011 | 14:29:00 | 21 | 2 | -12.69 | 0.37 |
| 1 | GM | 06-16-2011 | 14:32:15 | 21 | 2 | -11.69 | 0.93 |
| 1 | GM | 06-16-2011 | 14:35:29 | 21 | 2 | -10.69 | 5.41 |
| 1 | GM | 06-16-2011 | 14:38:43 | 21 | 2 | -9.69 | 4.69 |
| 1 | GM | 06-16-2011 | 14:41:54 | 21 | 2 | -8.69 | 2.42 |
| 1 | GM | 06-16-2011 | 14:45:09 | 21 | 2 | -7.69 | 0.89 |
| 1 | GM | 06-16-2011 | 14:48:20 | 21 | 2 | -6.69 | 0.12 |
| 1 | GM | 06-16-2011 | 14:51:30 | 21 | 2 | -5.69 | 0.02 |
| 1 | GM | 06-16-2011 | 14:54:44 | 21 | 2 | -4.69 | 0.05 |
| 1 | GM | 06-16-2011 | 14:58:33 | 21 | 2 | -3.69 | 0.11 |
| 1 | GM | 06-16-2011 | 15:01:45 | 21 | 2 | -2.69 | 0 |
| 1 | GM | 06-16-2011 | 15:04:58 | 21 | 2 | -1.69 | 0 |
| 1 | GM | 06-16-2011 | 15:10:04 | 21 | 1 | -22.69 | 0 |
| 1 | GM | 06-16-2011 | 15:13:19 | 21 | 1 | -21.69 | 0.04 |
| 1 | GM | 06-16-2011 | 15:16:35 | 21 | 1 | -20.69 | 0.07 |
| 1 | GM | 06-16-2011 | 15:19:52 | 21 | 1 | -19.69 | 0 |
| 1 | GM | 06-20-2011 | 07:41:59 | 21 | 1 | -18.69 | 0.03 |
| 1 | GM | 06-20-2011 | 07:45:14 | 21 | 1 | -17.69 | 0 |
| 1 | GM | 06-20-2011 | 07:48:28 | 21 | 1 | -16.69 | 0 |
| 1 | GM | 06-20-2011 | 07:51:44 | 21 | 1 | -15.69 | 0 |
| 1 | GM | 06-20-2011 | 07:55:01 | 21 | 1 | -14.69 | 0.03 |
| 1 | GM | 06-20-2011 | 07:58:16 | 21 | 1 | -13.69 | 0 |
| 1 | GM | 06-20-2011 | 08:01:29 | 21 | 1 | -12.69 | 0 |
| 1 | GM | 06-20-2011 | 08:04:46 | 21 | 1 | -11.69 | 0.09 |
| 1 | GM | 06-20-2011 | 08:08:01 | 21 | 1 | -10.69 | 0.11 |
| 1 | GM | 06-20-2011 | 08:11:16 | 21 | 1 | -9.69 | 0.76 |
| 1 | GM | 06-20-2011 | 08:14:35 | 21 | 1 | -8.69 | 0.77 |
| 1 | GM | 06-20-2011 | 08:17:51 | 21 | 1 | -7.69 | 0.12 |
| 1 | GM | 06-20-2011 | 08:21:09 | 21 | 1 | -6.69 | 0.04 |
| 1 | GM | 06-20-2011 | 08:24:27 | 21 | 1 | -5.69 | 0 |
| 1 | GM | 06-20-2011 | 08:27:44 | 21 | 1 | -6.69 | 0 |
| 1 | GM | 06-20-2011 | 08:31:07 | 21 | 1 | -3.69 | 0 |
| 1 | GM | 06-20-2011 | 08:34:25 | 21 | 1 | -2.69 | 0.21 |
| 1 | GM | 06-20-2011 | 08:37:44 | 21 | 1 | -1.69 | 0 |

# Appendix Table B 22 - VPU 22

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-16-2011 | 09:50:48 | 22 | 2 | -22.69 | 0.03 |
| 1 | GM | 06-16-2011 | 09:54:00 | 22 | 2 | -21.69 | 0.17 |
| 1 | GM | 06-16-2011 | 09:57:08 | 22 | 2 | -20.69 | 5.26 |
| 1 | GM | 06-16-2011 | 10:00:28 | 22 | 2 | -19.69 | 150.9 |
| 1 | GM | 06-16-2011 | 10:03:40 | 22 | 2 | -18.69 | 728.1 |
| 1 | GM | 06-16-2011 | 10:06:53 | 22 | 2 | -17.69 | 168.2 |
| 1 | GM | 06-16-2011 | 10:10:06 | 22 | 2 | -16.69 | 324.2 |
| 1 | GM | 06-16-2011 | 10:13:15 | 22 | 2 | -15.69 | 151 |
| 1 | GM | 06-16-2011 | 10:16:25 | 22 | 2 | -14.69 | 66.36 |
| 1 | GM | 06-16-2011 | 10:19:37 | 22 | 2 | -13.69 | 16.01 |
| 1 | GM | 06-16-2011 | 10:22:46 | 22 | 2 | -12.69 | 1.64 |
| 1 | GM | 06-16-2011 | 10:25:56 | 22 | 2 | -11.69 | 2.38 |
| 1 | GM | 06-16-2011 | 10:29:08 | 22 | 2 | -10.69 | 0.38 |
| 1 | GM | 06-16-2011 | 10:32:20 | 22 | 2 | -9.69 | 0 |
| 1 | GM | 06-16-2011 | 10:35:30 | 22 | 2 | -8.69 | 0 |
| 1 | GM | 06-16-2011 | 10:38:41 | 22 | 2 | -7.69 | 0.01 |
| 1 | GM | 06-16-2011 | 10:41:53 | 22 | 2 | -6.69 | 0 |
| 1 | GM | 06-16-2011 | 10:45:06 | 22 | 2 | -5.69 | 0 |
| 1 | GM | 06-16-2011 | 10:48:16 | 22 | 2 | -4.69 | 0.12 |
| 1 | GM | 06-16-2011 | 12:25:47 | 22 | 2 | -3.69 | 0.14 |
| 1 | GM | 06-16-2011 | 12:29:05 | 22 | 2 | -2.69 | 0.01 |
| 1 | GM | 06-16-2011 | 12:32:21 | 22 | 2 | -1.69 | 0 |
| 1 | GM | 06-16-2011 | 12:38:05 | 22 | 1 | -22.69 | 0.12 |
| 1 | GM | 06-16-2011 | 12:41:21 | 22 | 1 | -21.69 | 0.15 |
| 1 | GM | 06-16-2011 | 12:44:34 | 22 | 1 | -20.69 | 2.56 |
| 1 | GM | 06-16-2011 | 12:48:01 | 22 | 1 | -19.69 | 40.94 |
| 1 | GM | 06-16-2011 | 12:51:13 | 22 | 1 | -18.69 | 122.3 |
| 1 | GM | 06-16-2011 | 12:54:21 | 22 | 1 | -17.69 | 34.76 |
| 1 | GM | 06-16-2011 | 12:57:35 | 22 | 1 | -16.69 | 131 |
| 1 | GM | 06-16-2011 | 13:00:49 | 22 | 1 | -15.69 | 69.11 |
| 1 | GM | 06-16-2011 | 13:04:02 | 22 | 1 | -14.69 | 17.36 |
| 1 | GM | 06-16-2011 | 13:07:14 | 22 | 1 | -13.69 | 2.5 |
| 1 | GM | 06-16-2011 | 13:10:23 | 22 | 1 | -12.69 | 3.31 |
| 1 | GM | 06-16-2011 | 13:13:36 | 22 | 1 | -11.69 | 13.05 |
| 1 | GM | 06-16-2011 | 13:16:49 | 22 | 1 | -10.69 | 2.8 |
| 1 | GM | 06-16-2011 | 13:20:00 | 22 | 1 | -9.69 | 0.15 |
| 1 | GM | 06-16-2011 | 13:23:12 | 22 | 1 | -8.69 | 0 |
| 1 | GM | 06-16-2011 | 13:26:27 | 22 | 1 | -7.69 | 0 |
| 1 | GM | 06-16-2011 | 13:35:37 | 22 | 1 | -6.69 | 0.13 |
| 1 | GM | 06-16-2011 | 13:38:46 | 22 | 1 | -5.69 | 0 |
| 1 | GM | 06-16-2011 | 13:41:56 | 22 | 1 | -4.69 | 0 |
| 1 | GM | 06-16-2011 | 13:45:07 | 22 | 1 | -3.69 | 0 |
| 1 | GM | 06-16-2011 | 13:48:20 | 22 | 1 | -2.69 | 0.2 |
| 1 | GM | 06-16-2011 | 13:51:33 | 22 | 1 | -1.69 | 0 |

# Appendix Table B 23 - VPU 23

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-16-2011 | 07:24:36 | 23 | 2 | -22.69 | 0.15 |
| 1 | GM | 06-16-2011 | 07:27:50 | 23 | 2 | -21.69 | 0.19 |
| 1 | GM | 06-16-2011 | 07:30:58 | 23 | 2 | -20.69 | 0.13 |
| 1 | GM | 06-16-2011 | 07:34:09 | 23 | 2 | -19.69 | 1.89 |
| 1 | GM | 06-16-2011 | 07:37:21 | 23 | 2 | -18.69 | 69.79 |
| 1 | GM | 06-16-2011 | 07:40:34 | 23 | 2 | -17.69 | 1506 |
| 1 | GM | 06-16-2011 | 07:43:48 | 23 | 2 | -16.69 | 1985 |
| 1 | GM | 06-16-2011 | 07:47:00 | 23 | 2 | -15.69 | 1684 |
| 1 | GM | 06-16-2011 | 07:50:16 | 23 | 2 | -14.69 | 256.7 |
| 1 | GM | 06-16-2011 | 07:53:31 | 23 | 2 | -13.69 | 222 |
| 1 | GM | 06-16-2011 | 07:56:45 | 23 | 2 | -12.69 | 67.89 |
| 1 | GM | 06-16-2011 | 07:59:53 | 23 | 2 | -11.69 | 5.47 |
| 1 | GM | 06-16-2011 | 08:03:04 | 23 | 2 | -10.69 | 1.28 |
| 1 | GM | 06-16-2011 | 08:06:25 | 23 | 2 | -9.69 | 0.15 |
| 1 | GM | 06-16-2011 | 08:09:34 | 23 | 2 | -8.69 | 0.31 |
| 1 | GM | 06-16-2011 | 08:12:51 | 23 | 2 | -7.69 | 0 |
| 1 | GM | 06-16-2011 | 08:16:04 | 23 | 2 | -6.69 | 0.01 |
| 1 | GM | 06-16-2011 | 08:19:18 | 23 | 2 | -5.69 | 0 |
| 1 | GM | 06-16-2011 | 08:22:30 | 23 | 2 | -4.69 | 0 |
| 1 | GM | 06-16-2011 | 08:25:42 | 23 | 2 | -3.69 | 0.1 |
| 1 | GM | 06-16-2011 | 08:28:54 | 23 | 2 | -2.69 | 0.16 |
| 1 | GM | 06-16-2011 | 08:32:02 | 23 | 2 | -1.69 | 0.12 |
| 1 | GM | 06-16-2011 | 08:37:38 | 23 | 1 | -22.69 | 0 |
| 1 | GM | 06-16-2011 | 08:40:49 | 23 | 1 | -21.69 | 0 |
| 1 | GM | 06-16-2011 | 08:44:05 | 23 | 1 | -20.69 | 0.27 |
| 1 | GM | 06-16-2011 | 08:47:19 | 23 | 1 | -19.69 | 0.26 |
| 1 | GM | 06-16-2011 | 08:50:30 | 23 | 1 | -18.69 | 4.96 |
| 1 | GM | 06-16-2011 | 08:53:40 | 23 | 1 | -17.69 | 25.81 |
| 1 | GM | 06-16-2011 | 08:56:54 | 23 | 1 | -16.69 | 133.8 |
| 1 | GM | 06-16-2011 | 09:00:05 | 23 | 1 | -15.69 | 123.9 |
| 1 | GM | 06-16-2011 | 09:03:20 | 23 | 1 | -14.69 | 20.91 |
| 1 | GM | 06-16-2011 | 09:06:32 | 23 | 1 | -13.69 | 5.22 |
| 1 | GM | 06-16-2011 | 09:09:44 | 23 | 1 | -12.69 | 5.17 |
| 1 | GM | 06-16-2011 | 09:12:58 | 23 | 1 | -11.69 | 2 |
| 1 | GM | 06-16-2011 | 09:16:08 | 23 | 1 | -10.69 | 0.5 |
| 1 | GM | 06-16-2011 | 09:19:19 | 23 | 1 | -9.69 | 0.05 |
| 1 | GM | 06-16-2011 | 09:22:27 | 23 | 1 | -8.69 | 0.12 |
| 1 | GM | 06-16-2011 | 09:25:38 | 23 | 1 | -7.69 | 0 |
| 1 | GM | 06-16-2011 | 09:28:46 | 23 | 1 | -6.69 | 0 |
| 1 | GM | 06-16-2011 | 09:32:02 | 23 | 1 | -5.69 | 0 |
| 1 | GM | 06-16-2011 | 09:35:13 | 23 | 1 | -4.69 | 0.19 |
| 1 | GM | 06-16-2011 | 09:38:27 | 23 | 1 | -3.69 | 0.04 |
| 1 | GM | 06-16-2011 | 09:41:38 | 23 | 1 | -2.69 | 0 |
| 1 | GM | 06-16-2011 | 09:45:17 | 23 | 1 | -1.69 | 0.07 |

# Appendix Table B 24 - VPU 24

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-15-2011 | 13:15:54 | 24 | 2 | -22.69 | 0 |
| 1 | GM | 06-15-2011 | 13:19:12 | 24 | 2 | -21.69 | 0.01 |
| 1 | GM | 06-15-2011 | 13:22:23 | 24 | 2 | -20.69 | 0 |
| 1 | GM | 06-15-2011 | 13:25:36 | 24 | 2 | -19.69 | 0 |
| 1 | GM | 06-15-2011 | 13:28:51 | 24 | 2 | -18.69 | 0 |
| 1 | GM | 06-15-2011 | 13:32:02 | 24 | 2 | -17.69 | 0.09 |
| 1 | GM | 06-15-2011 | 13:35:37 | 24 | 2 | -16.69 | 0.24 |
| 1 | GM | 06-15-2011 | 13:38:47 | 24 | 2 | -15.69 | 0.49 |
| 1 | GM | 06-15-2011 | 13:42:00 | 24 | 2 | -14.69 | 0.52 |
| 1 | GM | 06-15-2011 | 13:45:10 | 24 | 2 | -13.69 | 0.77 |
| 1 | GM | 06-15-2011 | 13:48:20 | 24 | 2 | -12.69 | 0.39 |
| 1 | GM | 06-15-2011 | 13:51:31 | 24 | 2 | -11.69 | 0.13 |
| 1 | GM | 06-15-2011 | 13:54:42 | 24 | 2 | -10.69 | 0.28 |
| 1 | GM | 06-15-2011 | 13:57:55 | 24 | 2 | -9.69 | 0.01 |
| 1 | GM | 06-15-2011 | 14:01:04 | 24 | 2 | -8.69 | 0 |
| 1 | GM | 06-15-2011 | 14:04:16 | 24 | 2 | -7.69 | 0 |
| 1 | GM | 06-15-2011 | 14:07:28 | 24 | 2 | -6.69 | 0.01 |
| 1 | GM | 06-15-2011 | 14:10:42 | 24 | 2 | -5.69 | 0 |
| 1 | GM | 06-15-2011 | 14:13:54 | 24 | 2 | -4.69 | 0 |
| 1 | GM | 06-15-2011 | 14:17:05 | 24 | 2 | -3.69 | 0.01 |
| 1 | GM | 06-15-2011 | 14:20:16 | 24 | 2 | -2.69 | 0.18 |
| 1 | GM | 06-15-2011 | 14:23:29 | 24 | 2 | -1.69 | 0.01 |
| 1 | GM | 06-15-2011 | 14:27:07 | 24 | 1 | -22.69 | 0 |
| 1 | GM | 06-15-2011 | 14:30:26 | 24 | 1 | -21.69 | 0.03 |
| 1 | GM | 06-15-2011 | 14:34:41 | 24 | 1 | -20.69 | 0 |
| 1 | GM | 06-15-2011 | 14:37:59 | 24 | 1 | -19.69 | 0 |
| 1 | GM | 06-15-2011 | 14:41:15 | 24 | 1 | -18.69 | 0.03 |
| 1 | GM | 06-15-2011 | 14:44:31 | 24 | 1 | -17.69 | 2.09 |
| 1 | GM | 06-15-2011 | 14:47:49 | 24 | 1 | -16.69 | 8.02 |
| 1 | GM | 06-15-2011 | 14:51:00 | 24 | 1 | -15.69 | 6.2 |
| 1 | GM | 06-15-2011 | 14:54:12 | 24 | 1 | -14.69 | 5.3 |
| 1 | GM | 06-15-2011 | 14:57:23 | 24 | 1 | -13.69 | 15.26 |
| 1 | GM | 06-15-2011 | 15:00:32 | 24 | 1 | -12.69 | 18.26 |
| 1 | GM | 06-15-2011 | 15:03:46 | 24 | 1 | -11.69 | 6.51 |
| 1 | GM | 06-15-2011 | 15:06:56 | 24 | 1 | -10.69 | 4.2 |
| 1 | GM | 06-15-2011 | 15:10:08 | 24 | 1 | -9.69 | 0.59 |
| 1 | GM | 06-15-2011 | 15:13:19 | 24 | 1 | -8.69 | 0.03 |
| 1 | GM | 06-15-2011 | 15:16:31 | 24 | 1 | -7.69 | 0 |
| 1 | GM | 06-15-2011 | 15:20:35 | 24 | 1 | -6.69 | 0 |
| 1 | GM | 06-15-2011 | 15:23:49 | 24 | 1 | -5.69 | 0.05 |
| 1 | GM | 06-15-2011 | 15:26:59 | 24 | 1 | -4.69 | 0 |
| 1 | GM | 06-15-2011 | 15:30:10 | 24 | 1 | -3.69 | 0 |
| 1 | GM | 06-15-2011 | 15:33:36 | 24 | 1 | -2.69 | 0.09 |
| 1 | GM | 06-15-2011 | 15:36:48 | 24 | 1 | -1.69 | 0 |

# Appendix Table B 25 - VPU 25

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-15-2011 | 09:43:27 | 25 | 2 | -22.69 | 0 |
| 1 | GM | 06-15-2011 | 09:46:44 | 25 | 2 | -21.69 | 0.17 |
| 1 | GM | 06-15-2011 | 09:50:17 | 25 | 2 | -20.69 | 0 |
| 1 | GM | 06-15-2011 | 09:54:33 | 25 | 2 | -19.69 | 0.03 |
| 1 | GM | 06-15-2011 | 09:57:50 | 25 | 2 | -18.69 | 1.01 |
| 1 | GM | 06-15-2011 | 10:01:04 | 25 | 2 | -17.69 | 6.87 |
| 1 | GM | 06-15-2011 | 10:04:18 | 25 | 2 | -16.69 | 3.81 |
| 1 | GM | 06-15-2011 | 10:07:38 | 25 | 2 | -15.69 | 1.69 |
| 1 | GM | 06-15-2011 | 10:10:48 | 25 | 2 | -14.69 | 1.94 |
| 1 | GM | 06-15-2011 | 10:13:57 | 25 | 2 | -13.69 | 6.94 |
| 1 | GM | 06-15-2011 | 10:17:16 | 25 | 2 | -12.69 | 17.55 |
| 1 | GM | 06-15-2011 | 10:20:35 | 25 | 2 | -11.69 | 68.11 |
| 1 | GM | 06-15-2011 | 10:23:54 | 25 | 2 | -10.69 | 77.22 |
| 1 | GM | 06-15-2011 | 10:27:05 | 25 | 2 | -9.69 | 16.27 |
| 1 | GM | 06-15-2011 | 10:30:16 | 25 | 2 | -8.69 | 30.46 |
| 1 | GM | 06-15-2011 | 10:33:27 | 25 | 2 | -7.69 | 36.68 |
| 1 | GM | 06-15-2011 | 10:36:40 | 25 | 2 | -6.69 | 12.22 |
| 1 | GM | 06-15-2011 | 10:39:57 | 25 | 2 | -5.69 | 0.28 |
| 1 | GM | 06-15-2011 | 10:43:07 | 25 | 2 | -4.69 | 0.01 |
| 1 | GM | 06-15-2011 | 10:46:21 | 25 | 2 | -3.69 | 0.03 |
| 1 | GM | 06-15-2011 | 10:49:34 | 25 | 2 | -2.69 | 0 |
| 1 | GM | 06-15-2011 | 11:58:49 | 25 | 2 | -1.69 | 0.19 |
| 1 | GM | 06-15-2011 | 12:04:03 | 25 | 1 | -22.69 | 0.21 |
| 1 | GM | 06-15-2011 | 12:07:18 | 25 | 1 | -21.69 | 0 |
| 1 | GM | 06-15-2011 | 12:10:30 | 25 | 1 | -20.69 | 0 |
| 1 | GM | 06-15-2011 | 12:13:42 | 25 | 1 | -19.69 | 0.02 |
| 1 | GM | 06-15-2011 | 12:16:54 | 25 | 1 | -18.69 | 1.08 |
| 1 | GM | 06-15-2011 | 12:20:06 | 25 | 1 | -17.69 | 8.69 |
| 1 | GM | 06-15-2011 | 12:23:18 | 25 | 1 | -16.69 | 14.65 |
| 1 | GM | 06-15-2011 | 12:26:32 | 25 | 1 | -15.69 | 6.2 |
| 1 | GM | 06-15-2011 | 12:29:47 | 25 | 1 | -14.69 | 1.91 |
| 1 | GM | 06-15-2011 | 12:32:58 | 25 | 1 | -13.69 | 2.68 |
| 1 | GM | 06-15-2011 | 12:36:11 | 25 | 1 | -12.69 | 14.02 |
| 1 | GM | 06-15-2011 | 12:39:27 | 25 | 1 | -11.69 | 21.02 |
| 1 | GM | 06-15-2011 | 12:42:38 | 25 | 1 | -10.69 | 6.63 |
| 1 | GM | 06-15-2011 | 12:45:50 | 25 | 1 | -9.69 | 1.56 |
| 1 | GM | 06-15-2011 | 12:49:02 | 25 | 1 | -8.69 | 3.11 |
| 1 | GM | 06-15-2011 | 12:52:14 | 25 | 1 | -7.69 | 2.28 |
| 1 | GM | 06-15-2011 | 12:55:27 | 25 | 1 | -6.69 | 0.23 |
| 1 | GM | 06-15-2011 | 12:58:38 | 25 | 1 | -5.69 | 0 |
| 1 | GM | 06-15-2011 | 13:01:51 | 25 | 1 | -4.69 | 0 |
| 1 | GM | 06-15-2011 | 13:05:05 | 25 | 1 | -3.69 | 0.02 |
| 1 | GM | 06-15-2011 | 13:08:17 | 25 | 1 | -2.69 | 0.01 |
| 1 | GM | 06-15-2011 | 13:12:27 | 25 | 1 | -1.69 | 0.02 |

# Appendix Table B 26 - VPU 26

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-15-2011 | 07:18:24 | 26 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-15-2011 | 07:21:34 | 26 | 2 | -21.69 | 0 |
| 1 | GM | 06-15-2011 | 07:24:49 | 26 | 2 | -20.69 | 0.01 |
| 1 | GM | 06-15-2011 | 07:27:57 | 26 | 2 | -19.69 | 0.73 |
| 1 | GM | 06-15-2011 | 07:31:05 | 26 | 2 | -18.69 | 44.29 |
| 1 | GM | 06-15-2011 | 07:34:17 | 26 | 2 | -17.69 | 1217 |
| 1 | GM | 06-15-2011 | 07:37:32 | 26 | 2 | -16.69 | 284.6 |
| 1 | GM | 06-15-2011 | 07:40:45 | 26 | 2 | -15.69 | 71.61 |
| 1 | GM | 06-15-2011 | 07:43:56 | 26 | 2 | -14.69 | 233 |
| 1 | GM | 06-15-2011 | 07:47:10 | 26 | 2 | -13.69 | 161.7 |
| 1 | GM | 06-15-2011 | 07:50:23 | 26 | 2 | -12.69 | 15.56 |
| 1 | GM | 06-15-2011 | 07:53:36 | 26 | 2 | -11.69 | 0.37 |
| 1 | GM | 06-15-2011 | 07:56:47 | 26 | 2 | -10.69 | 0.11 |
| 1 | GM | 06-15-2011 | 08:00:00 | 26 | 2 | -9.69 | 0 |
| 1 | GM | 06-15-2011 | 08:03:21 | 26 | 2 | -8.69 | 0.04 |
| 1 | GM | 06-15-2011 | 08:06:54 | 26 | 2 | -7.69 | 0 |
| 1 | GM | 06-15-2011 | 08:10:05 | 26 | 2 | -6.69 | 0.3 |
| 1 | GM | 06-15-2011 | 08:13:18 | 26 | 2 | -5.69 | 0.03 |
| 1 | GM | 06-15-2011 | 08:16:29 | 26 | 2 | -4.69 | 0 |
| 1 | GM | 06-15-2011 | 08:19:38 | 26 | 2 | -3.69 | 0 |
| 1 | GM | 06-15-2011 | 08:22:50 | 26 | 2 | -2.69 | 0.02 |
| 1 | GM | 06-15-2011 | 08:26:01 | 26 | 2 | -1.69 | 0.08 |
| 1 | GM | 06-15-2011 | 08:30:14 | 26 | 1 | -22.69 | 0 |
| 1 | GM | 06-15-2011 | 08:33:25 | 26 | 1 | -21.69 | 0.22 |
| 1 | GM | 06-15-2011 | 08:36:41 | 26 | 1 | -20.69 | 0 |
| 1 | GM | 06-15-2011 | 08:39:54 | 26 | 1 | -19.69 | 0.13 |
| 1 | GM | 06-15-2011 | 08:43:11 | 26 | 1 | -18.69 | 2.82 |
| 1 | GM | 06-15-2011 | 08:46:30 | 26 | 1 | -17.69 | 22.86 |
| 1 | GM | 06-15-2011 | 08:49:46 | 26 | 1 | -16.69 | 12.37 |
| 1 | GM | 06-15-2011 | 08:53:01 | 26 | 1 | -15.69 | 3.51 |
| 1 | GM | 06-15-2011 | 08:56:16 | 26 | 1 | -14.69 | 13.77 |
| 1 | GM | 06-15-2011 | 08:59:29 | 26 | 1 | -13.69 | 7.49 |
| 1 | GM | 06-15-2011 | 09:02:43 | 26 | 1 | -12.69 | 1.03 |
| 1 | GM | 06-15-2011 | 09:05:57 | 26 | 1 | -11.69 | 0.2 |
| 1 | GM | 06-15-2011 | 09:09:09 | 26 | 1 | -10.69 | 0.2 |
| 1 | GM | 06-15-2011 | 09:12:19 | 26 | 1 | -9.69 | 0 |
| 1 | GM | 06-15-2011 | 09:15:33 | 26 | 1 | -8.69 | 0 |
| 1 | GM | 06-15-2011 | 09:18:43 | 26 | 1 | -7.69 | 0 |
| 1 | GM | 06-15-2011 | 09:21:56 | 26 | 1 | -6.69 | 0.21 |
| 1 | GM | 06-15-2011 | 09:25:05 | 26 | 1 | -5.69 | 0.12 |
| 1 | GM | 06-15-2011 | 09:28:20 | 26 | 1 | -4.69 | 0.16 |
| 1 | GM | 06-15-2011 | 09:31:34 | 26 | 1 | -3.69 | 0 |
| 1 | GM | 06-15-2011 | 09:34:47 | 26 | 1 | -2.69 | 0.17 |
| 1 | GM | 06-15-2011 | 09:37:58 | 26 | 1 | -1.69 | 0.03 |

# Appendix Table B 27 - VPU 27

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-14-2011 | 13:20:40 | 27 | 2 | -22.69 | 0.06 |
| 1 | GM | 06-14-2011 | 13:24:00 | 27 | 2 | -21.69 | 0.06 |
| 1 | GM | 06-14-2011 | 13:27:12 | 27 | 2 | -20.69 | 0 |
| 1 | GM | 06-14-2011 | 13:30:22 | 27 | 2 | -19.69 | 0.03 |
| 1 | GM | 06-14-2011 | 13:33:33 | 27 | 2 | -18.69 | 3.44 |
| 1 | GM | 06-14-2011 | 13:36:46 | 27 | 2 | -17.69 | 40.11 |
| 1 | GM | 06-14-2011 | 13:39:58 | 27 | 2 | -16.69 | 18.93 |
| 1 | GM | 06-14-2011 | 13:43:10 | 27 | 2 | -15.69 | 5.63 |
| 1 | GM | 06-14-2011 | 13:46:21 | 27 | 2 | -14.69 | 8.81 |
| 1 | GM | 06-14-2011 | 13:49:32 | 27 | 2 | -13.69 | 7.38 |
| 1 | GM | 06-14-2011 | 13:52:47 | 27 | 2 | -12.69 | 0.52 |
| 1 | GM | 06-14-2011 | 13:55:59 | 27 | 2 | -11.69 | 0.08 |
| 1 | GM | 06-14-2011 | 13:59:14 | 27 | 2 | -10.69 | 0.06 |
| 1 | GM | 06-14-2011 | 14:02:26 | 27 | 2 | -9.69 | 0 |
| 1 | GM | 06-14-2011 | 14:05:37 | 27 | 2 | -8.69 | 0.03 |
| 1 | GM | 06-14-2011 | 14:08:46 | 27 | 2 | -7.69 | 0.03 |
| 1 | GM | 06-14-2011 | 14:11:59 | 27 | 2 | -6.69 | 0.01 |
| 1 | GM | 06-14-2011 | 14:15:18 | 27 | 2 | -5.69 | 0.04 |
| 1 | GM | 06-14-2011 | 14:18:29 | 27 | 2 | -4.69 | 0 |
| 1 | GM | 06-14-2011 | 14:21:40 | 27 | 2 | -3.69 | 0 |
| 1 | GM | 06-14-2011 | 14:24:49 | 27 | 2 | -2.69 | 0 |
| 1 | GM | 06-14-2011 | 14:28:03 | 27 | 2 | -1.69 | 0 |
| 1 | GM | 06-14-2011 | 14:32:46 | 27 | 1 | -22.69 | 0 |
| 1 | GM | 06-14-2011 | 14:36:24 | 27 | 1 | -21.69 | 0 |
| 1 | GM | 06-14-2011 | 14:39:43 | 27 | 1 | -20.69 | 0 |
| 1 | GM | 06-14-2011 | 14:42:57 | 27 | 1 | -19.69 | 0.01 |
| 1 | GM | 06-14-2011 | 14:46:05 | 27 | 1 | -18.69 | 0.22 |
| 1 | GM | 06-14-2011 | 14:49:15 | 27 | 1 | -17.69 | 0.83 |
| 1 | GM | 06-14-2011 | 14:52:30 | 27 | 1 | -16.69 | 0.8 |
| 1 | GM | 06-14-2011 | 14:55:46 | 27 | 1 | -15.69 | 3.71 |
| 1 | GM | 06-14-2011 | 14:58:57 | 27 | 1 | -14.69 | 16.14 |
| 1 | GM | 06-14-2011 | 15:02:10 | 27 | 1 | -13.69 | 2.82 |
| 1 | GM | 06-14-2011 | 15:05:25 | 27 | 1 | -12.69 | 0.28 |
| 1 | GM | 06-14-2011 | 15:08:38 | 27 | 1 | -11.69 | 0.01 |
| 1 | GM | 06-14-2011 | 15:11:50 | 27 | 1 | -10.69 | 0.04 |
| 1 | GM | 06-14-2011 | 15:15:00 | 27 | 1 | -9.69 | 0.05 |
| 1 | GM | 06-14-2011 | 15:18:15 | 27 | 1 | -8.69 | 0 |
| 1 | GM | 06-14-2011 | 15:22:05 | 27 | 1 | -7.69 | 0.11 |
| 1 | GM | 06-14-2011 | 15:25:15 | 27 | 1 | -6.69 | 0 |
| 1 | GM | 06-14-2011 | 15:28:31 | 27 | 1 | -5.69 | 0.04 |
| 1 | GM | 06-14-2011 | 15:31:46 | 27 | 1 | -4.69 | 0.22 |
| 1 | GM | 06-14-2011 | 15:34:55 | 27 | 1 | -3.69 | 0.1 |
| 1 | GM | 06-14-2011 | 15:38:07 | 27 | 1 | -2.69 | 0.08 |
| 1 | GM | 06-14-2011 | 15:41:40 | 27 | 1 | -1.69 | 0.01 |

# Appendix Table B 28 - VPU 28

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-14-2011 | 09:48:51 | 28 | 2 | -22.69 | 0 |
| 1 | GM | 06-14-2011 | 09:52:03 | 28 | 2 | -21.69 | 0 |
| 1 | GM | 06-14-2011 | 09:55:14 | 28 | 2 | -20.69 | 0 |
| 1 | GM | 06-14-2011 | 09:58:25 | 28 | 2 | -19.69 | 0.04 |
| 1 | GM | 06-14-2011 | 10:01:37 | 28 | 2 | -18.69 | 0 |
| 1 | GM | 06-14-2011 | 10:04:51 | 28 | 2 | -17.69 | 0.01 |
| 1 | GM | 06-14-2011 | 10:08:05 | 28 | 2 | -16.69 | 0 |
| 1 | GM | 06-14-2011 | 10:11:17 | 28 | 2 | -15.69 | 0 |
| 1 | GM | 06-14-2011 | 10:14:29 | 28 | 2 | -14.69 | 0 |
| 1 | GM | 06-14-2011 | 10:17:40 | 28 | 2 | -13.69 | 0.11 |
| 1 | GM | 06-14-2011 | 10:20:50 | 28 | 2 | -12.69 | 0 |
| 1 | GM | 06-14-2011 | 10:24:04 | 28 | 2 | -11.69 | 0.23 |
| 1 | GM | 06-14-2011 | 10:27:14 | 28 | 2 | -10.69 | 0 |
| 1 | GM | 06-14-2011 | 10:30:26 | 28 | 2 | -9.69 | 0 |
| 1 | GM | 06-14-2011 | 10:33:36 | 28 | 2 | -8.69 | 0.09 |
| 1 | GM | 06-14-2011 | 10:36:47 | 28 | 2 | -7.69 | 0.03 |
| 1 | GM | 06-14-2011 | 10:39:58 | 28 | 2 | -6.69 | 0.01 |
| 1 | GM | 06-14-2011 | 10:43:08 | 28 | 2 | -5.69 | 0.04 |
| 1 | GM | 06-14-2011 | 10:46:19 | 28 | 2 | -4.69 | 0 |
| 1 | GM | 06-14-2011 | 11:56:54 | 28 | 2 | -3.69 | 0.06 |
| 1 | GM | 06-14-2011 | 12:00:16 | 28 | 2 | -2.69 | 0 |
| 1 | GM | 06-14-2011 | 12:03:28 | 28 | 2 | -1.69 | 0 |
| 1 | GM | 06-14-2011 | 12:07:42 | 28 | 1 | -22.69 | 0 |
| 1 | GM | 06-14-2011 | 12:10:54 | 28 | 1 | -21.69 | 0 |
| 1 | GM | 06-14-2011 | 12:14:06 | 28 | 1 | -20.69 | 0 |
| 1 | GM | 06-14-2011 | 12:17:17 | 28 | 1 | -19.69 | 0.03 |
| 1 | GM | 06-14-2011 | 12:20:30 | 28 | 1 | -18.69 | 0 |
| 1 | GM | 06-14-2011 | 12:23:42 | 28 | 1 | -17.69 | 0.01 |
| 1 | GM | 06-14-2011 | 12:26:54 | 28 | 1 | -16.69 | 0 |
| 1 | GM | 06-14-2011 | 12:30:06 | 28 | 1 | -15.69 | 0 |
| 1 | GM | 06-14-2011 | 12:33:27 | 28 | 1 | -14.69 | 0 |
| 1 | GM | 06-14-2011 | 12:36:39 | 28 | 1 | -13.69 | 0 |
| 1 | GM | 06-14-2011 | 12:39:50 | 28 | 1 | -12.69 | 0 |
| 1 | GM | 06-14-2011 | 12:43:44 | 28 | 1 | -11.69 | 0 |
| 1 | GM | 06-14-2011 | 12:46:57 | 28 | 1 | -10.69 | 0.11 |
| 1 | GM | 06-14-2011 | 12:50:11 | 28 | 1 | -9.69 | 0.03 |
| 1 | GM | 06-14-2011 | 12:53:21 | 28 | 1 | -8.69 | 0 |
| 1 | GM | 06-14-2011 | 12:56:36 | 28 | 1 | -7.69 | 0.1 |
| 1 | GM | 06-14-2011 | 12:59:47 | 28 | 1 | -6.69 | 0.01 |
| 1 | GM | 06-14-2011 | 13:02:56 | 28 | 1 | -5.69 | 0 |
| 1 | GM | 06-14-2011 | 13:06:11 | 28 | 1 | -4.69 | 0 |
| 1 | GM | 06-14-2011 | 13:09:22 | 28 | 1 | -3.69 | 0.02 |
| 1 | GM | 06-14-2011 | 13:12:35 | 28 | 1 | -2.69 | 0.04 |
| 1 | GM | 06-14-2011 | 13:15:44 | 28 | 1 | -1.69 | 0.03 |

# Appendix Table B 29 - VPU 29

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-14-2011 | 07:22:46 | 29 | 2 | -22.69 | 0 |
| 1 | GM | 06-14-2011 | 07:25:57 | 29 | 2 | -21.69 | 0 |
| 1 | GM | 06-14-2011 | 07:29:09 | 29 | 2 | -20.69 | 0.02 |
| 1 | GM | 06-14-2011 | 07:33:43 | 29 | 2 | -19.69 | 0 |
| 1 | GM | 06-14-2011 | 07:36:53 | 29 | 2 | -18.69 | 0.01 |
| 1 | GM | 06-14-2011 | 07:40:04 | 29 | 2 | -17.69 | 0 |
| 1 | GM | 06-14-2011 | 07:43:18 | 29 | 2 | -16.69 | 0 |
| 1 | GM | 06-14-2011 | 07:46:38 | 29 | 2 | -15.69 | 0.01 |
| 1 | GM | 06-14-2011 | 07:49:51 | 29 | 2 | -14.69 | 0.13 |
| 1 | GM | 06-14-2011 | 07:52:59 | 29 | 2 | -13.69 | 0 |
| 1 | GM | 06-14-2011 | 07:56:11 | 29 | 2 | -12.69 | 0.01 |
| 1 | GM | 06-14-2011 | 07:59:24 | 29 | 2 | -11.69 | 0.01 |
| 1 | GM | 06-14-2011 | 08:02:43 | 29 | 2 | -10.69 | 0 |
| 1 | GM | 06-14-2011 | 08:05:53 | 29 | 2 | -9.69 | 0.01 |
| 1 | GM | 06-14-2011 | 08:09:06 | 29 | 2 | -8.69 | 0.01 |
| 1 | GM | 06-14-2011 | 08:12:17 | 29 | 2 | -7.69 | 0 |
| 1 | GM | 06-14-2011 | 08:15:28 | 29 | 2 | -6.69 | 0 |
| 1 | GM | 06-14-2011 | 08:18:40 | 29 | 2 | -5.69 | 0.16 |
| 1 | GM | 06-14-2011 | 08:21:51 | 29 | 2 | -4.69 | 0.11 |
| 1 | GM | 06-14-2011 | 08:25:08 | 29 | 2 | -3.69 | 0 |
| 1 | GM | 06-14-2011 | 08:28:20 | 29 | 2 | -2.69 | 0.01 |
| 1 | GM | 06-14-2011 | 08:31:31 | 29 | 2 | -1.69 | 0 |
| 1 | GM | 06-14-2011 | 08:36:14 | 29 | 1 | -22.69 | 0 |
| 1 | GM | 06-14-2011 | 08:39:27 | 29 | 1 | -21.69 | 0 |
| 1 | GM | 06-14-2011 | 08:42:42 | 29 | 1 | -20.69 | 0 |
| 1 | GM | 06-14-2011 | 08:45:54 | 29 | 1 | -19.69 | 0 |
| 1 | GM | 06-14-2011 | 08:49:05 | 29 | 1 | -18.69 | 0 |
| 1 | GM | 06-14-2011 | 08:52:18 | 29 | 1 | -17.69 | 0.24 |
| 1 | GM | 06-14-2011 | 08:55:48 | 29 | 1 | -16.69 | 0.25 |
| 1 | GM | 06-14-2011 | 08:59:01 | 29 | 1 | -15.69 | 0 |
| 1 | GM | 06-14-2011 | 09:02:11 | 29 | 1 | -14.69 | 0 |
| 1 | GM | 06-14-2011 | 09:05:29 | 29 | 1 | -13.69 | 0 |
| 1 | GM | 06-14-2011 | 09:08:44 | 29 | 1 | -12.69 | 0 |
| 1 | GM | 06-14-2011 | 09:11:55 | 29 | 1 | -11.69 | 0 |
| 1 | GM | 06-14-2011 | 09:15:08 | 29 | 1 | -10.69 | 0.04 |
| 1 | GM | 06-14-2011 | 09:18:21 | 29 | 1 | -9.69 | 0 |
| 1 | GM | 06-14-2011 | 09:21:34 | 29 | 1 | -8.69 | 0.04 |
| 1 | GM | 06-14-2011 | 09:24:49 | 29 | 1 | -7.69 | 0 |
| 1 | GM | 06-14-2011 | 09:28:02 | 29 | 1 | -6.69 | 0 |
| 1 | GM | 06-14-2011 | 09:31:19 | 29 | 1 | -5.69 | 0.35 |
| 1 | GM | 06-14-2011 | 09:34:29 | 29 | 1 | -4.69 | 0 |
| 1 | GM | 06-14-2011 | 09:37:49 | 29 | 1 | -3.69 | 0.01 |
| 1 | GM | 06-14-2011 | 09:41:03 | 29 | 1 | -2.69 | 0.05 |
| 1 | GM | 06-14-2011 | 09:44:17 | 29 | 1 | -1.69 | 0.18 |

# Appendix Table B 30 - VPU 30

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-13-2011 | 13:24:49 | 30 | 2 | -22.69 | 0.04 |
| 1 | GM | 06-13-2011 | 13:28:03 | 30 | 2 | -21.69 | 0 |
| 1 | GM | 06-13-2011 | 13:31:14 | 30 | 2 | -20.69 | 0.04 |
| 1 | GM | 06-13-2011 | 13:34:32 | 30 | 2 | -19.69 | 0.56 |
| 1 | GM | 06-13-2011 | 13:37:43 | 30 | 2 | -18.69 | 18.39 |
| 1 | GM | 06-13-2011 | 13:41:04 | 30 | 2 | -17.69 | 229.2 |
| 1 | GM | 06-13-2011 | 13:44:20 | 30 | 2 | -16.69 | 283.9 |
| 1 | GM | 06-13-2011 | 13:47:39 | 30 | 2 | -15.69 | 345.4 |
| 1 | GM | 06-13-2011 | 13:50:56 | 30 | 2 | -14.69 | 314.7 |
| 1 | GM | 06-13-2011 | 13:54:11 | 30 | 2 | -13.69 | 138.8 |
| 1 | GM | 06-13-2011 | 13:57:23 | 30 | 2 | -12.69 | 34.85 |
| 1 | GM | 06-13-2011 | 14:00:36 | 30 | 2 | -11.69 | 4.02 |
| 1 | GM | 06-13-2011 | 14:03:50 | 30 | 2 | -10.69 | 5.75 |
| 1 | GM | 06-13-2011 | 14:07:10 | 30 | 2 | -9.69 | 1.78 |
| 1 | GM | 06-13-2011 | 14:10:23 | 30 | 2 | -8.69 | 0.08 |
| 1 | GM | 06-13-2011 | 14:13:37 | 30 | 2 | -7.69 | 0.12 |
| 1 | GM | 06-13-2011 | 14:16:56 | 30 | 2 | -6.69 | 0 |
| 1 | GM | 06-13-2011 | 14:20:09 | 30 | 2 | -5.69 | 0 |
| 1 | GM | 06-13-2011 | 14:23:25 | 30 | 2 | -4.69 | 0.05 |
| 1 | GM | 06-13-2011 | 14:26:36 | 30 | 2 | -3.69 | 0.19 |
| 1 | GM | 06-13-2011 | 14:29:49 | 30 | 2 | -2.69 | 0 |
| 1 | GM | 06-13-2011 | 14:33:00 | 30 | 2 | -1.69 | 0.04 |
| 1 | GM | 06-13-2011 | 14:37:10 | 30 | 1 | -22.69 | 0.01 |
| 1 | GM | 06-13-2011 | 14:40:23 | 30 | 1 | -21.69 | 0.02 |
| 1 | GM | 06-13-2011 | 14:43:39 | 30 | 1 | -20.69 | 0.02 |
| 1 | GM | 06-13-2011 | 14:46:49 | 30 | 1 | -19.69 | 0.01 |
| 1 | GM | 06-13-2011 | 14:50:02 | 30 | 1 | -18.69 | 0.16 |
| 1 | GM | 06-13-2011 | 14:53:12 | 30 | 1 | -17.69 | 0.67 |
| 1 | GM | 06-13-2011 | 14:56:27 | 30 | 1 | -16.69 | 4 |
| 1 | GM | 06-13-2011 | 15:01:32 | 30 | 1 | -15.69 | 9.93 |
| 1 | GM | 06-13-2011 | 15:04:46 | 30 | 1 | -14.69 | 22.65 |
| 1 | GM | 06-13-2011 | 15:07:58 | 30 | 1 | -13.69 | 28.53 |
| 1 | GM | 06-13-2011 | 15:11:09 | 30 | 1 | -12.69 | 12.01 |
| 1 | GM | 06-13-2011 | 15:14:20 | 30 | 1 | -11.69 | 1.27 |
| 1 | GM | 06-13-2011 | 15:17:40 | 30 | 1 | -10.69 | 0.36 |
| 1 | GM | 06-13-2011 | 15:20:56 | 30 | 1 | -9.69 | 0.16 |
| 1 | GM | 06-13-2011 | 15:24:05 | 30 | 1 | -8.69 | 0.09 |
| 1 | GM | 06-13-2011 | 15:27:15 | 30 | 1 | -7.69 | 0.01 |
| 1 | GM | 06-13-2011 | 15:30:26 | 30 | 1 | -6.69 | 0 |
| 1 | GM | 06-13-2011 | 15:33:39 | 30 | 1 | -5.69 | 0.02 |
| 1 | GM | 06-13-2011 | 15:36:53 | 30 | 1 | -4.69 | 0 |
| 1 | GM | 06-13-2011 | 15:40:24 | 30 | 1 | -3.69 | 0 |
| 1 | GM | 06-13-2011 | 15:43:37 | 30 | 1 | -2.69 | 0 |
| 1 | GM | 06-13-2011 | 15:46:49 | 30 | 1 | -1.69 | 0 |

# Appendix Table B 31 - VPU 31

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-06-2011 | 12:28:12 | 31 | 2 | -22.69 | 0.1 |
| 1 | GM | 06-06-2011 | 12:31:23 | 31 | 2 | -21.69 | 0 |
| 1 | GM | 06-06-2011 | 12:34:36 | 31 | 2 | -20.69 | 0.04 |
| 1 | GM | 06-06-2011 | 12:37:49 | 31 | 2 | -19.69 | 1.93 |
| 1 | GM | 06-06-2011 | 12:41:01 | 31 | 2 | -18.69 | 13.17 |
| 1 | GM | 06-06-2011 | 12:44:17 | 31 | 2 | -17.69 | 88.27 |
| 1 | GM | 06-06-2011 | 12:47:30 | 31 | 2 | -16.69 | 137.6 |
| 1 | GM | 06-06-2011 | 12:50:41 | 31 | 2 | -15.69 | 168.2 |
| 1 | GM | 06-06-2011 | 12:53:54 | 31 | 2 | -14.69 | 237.8 |
| 1 | GM | 06-06-2011 | 12:59:31 | 31 | 2 | -13.69 | 98.57 |
| 1 | GM | 06-06-2011 | 13:02:44 | 31 | 2 | -12.69 | 199.3 |
| 1 | GM | 06-06-2011 | 13:05:57 | 31 | 2 | -11.69 | 281.3 |
| 1 | GM | 06-06-2011 | 13:09:10 | 31 | 2 | -10.69 | 47.02 |
| 1 | GM | 06-06-2011 | 13:12:20 | 31 | 2 | -9.69 | 14.39 |
| 1 | GM | 06-06-2011 | 13:15:33 | 31 | 2 | -8.69 | 6.13 |
| 1 | GM | 06-06-2011 | 13:18:55 | 31 | 2 | -7.69 | 0.52 |
| 1 | GM | 06-06-2011 | 13:22:12 | 31 | 2 | -6.69 | 0.16 |
| 1 | GM | 06-06-2011 | 13:25:25 | 31 | 2 | -5.69 | 0.02 |
| 1 | GM | 06-06-2011 | 13:28:37 | 31 | 2 | -4.69 | 0.07 |
| 1 | GM | 06-06-2011 | 13:31:50 | 31 | 2 | -3.69 | 0.05 |
| 1 | GM | 06-06-2011 | 13:35:02 | 31 | 2 | -2.69 | 0 |
| 1 | GM | 06-06-2011 | 13:38:15 | 31 | 2 | -1.69 | 0 |
| 1 | GM | 06-06-2011 | 13:42:25 | 31 | 1 | -22.69 | 0.05 |
| 1 | GM | 06-06-2011 | 13:45:41 | 31 | 1 | -21.69 | 0.01 |
| 1 | GM | 06-06-2011 | 13:48:54 | 31 | 1 | -20.69 | 0.1 |
| 1 | GM | 06-06-2011 | 13:52:26 | 31 | 1 | -19.69 | 4.41 |
| 1 | GM | 06-06-2011 | 13:55:43 | 31 | 1 | -18.69 | 78.35 |
| 1 | GM | 06-06-2011 | 13:58:55 | 31 | 1 | -17.69 | 1706 |
| 1 | GM | 06-06-2011 | 14:02:30 | 31 | 1 | -16.69 | 1775 |
| 1 | GM | 06-06-2011 | 14:05:43 | 31 | 1 | -15.69 | 2073 |
| 1 | GM | 06-06-2011 | 14:08:56 | 31 | 1 | -14.69 | 209.3 |
| 1 | GM | 06-06-2011 | 14:12:12 | 31 | 1 | -13.69 | 205.4 |
| 1 | GM | 06-06-2011 | 14:15:25 | 31 | 1 | -12.69 | 1967 |
| 1 | GM | 06-06-2011 | 14:18:41 | 31 | 1 | -11.69 | 679.8 |
| 1 | GM | 06-06-2011 | 14:21:57 | 31 | 1 | -10.69 | 87.93 |
| 1 | GM | 06-06-2011 | 14:25:11 | 31 | 1 | -9.69 | 6.1 |
| 1 | GM | 06-06-2011 | 14:28:25 | 31 | 1 | -8.69 | 0.87 |
| 1 | GM | 06-06-2011 | 14:31:42 | 31 | 1 | -7.69 | 0.31 |
| 1 | GM | 06-06-2011 | 14:34:52 | 31 | 1 | -6.69 | 0.19 |
| 1 | GM | 06-06-2011 | 14:38:06 | 31 | 1 | -5.69 | 0 |
| 1 | GM | 06-06-2011 | 14:41:23 | 31 | 1 | -4.69 | 0.17 |
| 1 | GM | 06-06-2011 | 14:44:42 | 31 | 1 | -3.69 | 0 |
| 1 | GM | 06-06-2011 | 14:47:56 | 31 | 1 | -2.69 | 0 |
| 1 | GM | 06-06-2011 | 14:51:14 | 31 | 1 | -1.69 | 0 |

# Appendix Table B 32 - VPU 32

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-06-2011 | 08:48:12 | 32 | 2 | -22.69 | 0 |
| 1 | GM | 06-06-2011 | 08:51:24 | 32 | 2 | -21.69 | 0.02 |
| 1 | GM | 06-06-2011 | 08:54:36 | 32 | 2 | -20.69 | 0.07 |
| 1 | GM | 06-06-2011 | 08:57:47 | 32 | 2 | -19.69 | 0.16 |
| 1 | GM | 06-06-2011 | 09:00:59 | 32 | 2 | -18.69 | 2 |
| 1 | GM | 06-06-2011 | 09:04:17 | 32 | 2 | -17.69 | 17.42 |
| 1 | GM | 06-06-2011 | 09:07:31 | 32 | 2 | -16.69 | 22.68 |
| 1 | GM | 06-06-2011 | 09:10:44 | 32 | 2 | -15.69 | 5.05 |
| 1 | GM | 06-06-2011 | 09:13:59 | 32 | 2 | -14.69 | 1.31 |
| 1 | GM | 06-06-2011 | 09:17:11 | 32 | 2 | -13.69 | 3.88 |
| 1 | GM | 06-06-2011 | 09:20:23 | 32 | 2 | -12.69 | 4.89 |
| 1 | GM | 06-06-2011 | 09:23:34 | 32 | 2 | -11.69 | 7.05 |
| 1 | GM | 06-06-2011 | 09:27:04 | 32 | 2 | -10.69 | 1.59 |
| 1 | GM | 06-06-2011 | 09:30:21 | 32 | 2 | -9.69 | 2.41 |
| 1 | GM | 06-06-2011 | 09:33:35 | 32 | 2 | -8.69 | 17.73 |
| 1 | GM | 06-06-2011 | 09:36:50 | 32 | 2 | -7.69 | 37.96 |
| 1 | GM | 06-06-2011 | 09:40:08 | 32 | 2 | -6.69 | 4.47 |
| 1 | GM | 06-06-2011 | 09:43:20 | 32 | 2 | -5.69 | 0.65 |
| 1 | GM | 06-06-2011 | 09:46:34 | 32 | 2 | -4.69 | 0.05 |
| 1 | GM | 06-06-2011 | 09:49:47 | 32 | 2 | -3.69 | 0.02 |
| 1 | GM | 06-06-2011 | 09:53:01 | 32 | 2 | -2.69 | 0 |
| 1 | GM | 06-06-2011 | 09:56:14 | 32 | 2 | -1.69 | 0.04 |
| 1 | GM | 06-06-2011 | 10:00:27 | 32 | 1 | -22.69 | 0.15 |
| 1 | GM | 06-06-2011 | 10:03:45 | 32 | 1 | -21.69 | 0.01 |
| 1 | GM | 06-06-2011 | 10:07:01 | 32 | 1 | -20.69 | 0 |
| 1 | GM | 06-06-2011 | 10:10:12 | 32 | 1 | -19.69 | 0.2 |
| 1 | GM | 06-06-2011 | 10:13:24 | 32 | 1 | -18.69 | 5.59 |
| 1 | GM | 06-06-2011 | 10:16:37 | 32 | 1 | -17.69 | 54.21 |
| 1 | GM | 06-06-2011 | 10:20:31 | 32 | 1 | -16.69 | 66.29 |
| 1 | GM | 06-06-2011 | 10:23:45 | 32 | 1 | -15.69 | 6.02 |
| 1 | GM | 06-06-2011 | 10:27:00 | 32 | 1 | -14.69 | 0.68 |
| 1 | GM | 06-06-2011 | 10:30:13 | 32 | 1 | -13.69 | 0.67 |
| 1 | GM | 06-06-2011 | 10:33:46 | 32 | 1 | -12.69 | 3.13 |
| 1 | GM | 06-06-2011 | 10:37:00 | 32 | 1 | -11.69 | 6.2 |
| 1 | GM | 06-06-2011 | 10:40:15 | 32 | 1 | -10.69 | 2.45 |
| 1 | GM | 06-06-2011 | 10:43:41 | 32 | 1 | -9.69 | 2.35 |
| 1 | GM | 06-06-2011 | 11:42:16 | 32 | 1 | -8.69 | 8.95 |
| 1 | GM | 06-06-2011 | 11:59:11 | 32 | 1 | -7.69 | 11.21 |
| 1 | GM | 06-06-2011 | 12:02:29 | 32 | 1 | -6.69 | 1.17 |
| 1 | GM | 06-06-2011 | 12:05:42 | 32 | 1 | -5.69 | 0.17 |
| 1 | GM | 06-06-2011 | 12:08:55 | 32 | 1 | -4.69 | 0.04 |
| 1 | GM | 06-06-2011 | 12:12:07 | 32 | 1 | -3.69 | 0 |
| 1 | GM | 06-06-2011 | 12:15:23 | 32 | 1 | -2.69 | 0 |
| 1 | GM | 06-06-2011 | 12:19:45 | 32 | 1 | -1.69 | 0.01 |

# Appendix Table B 33 - VPU 33

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-02-2011 | 13:42:25 | 33 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-02-2011 | 13:45:42 | 33 | 2 | -21.69 | 0 |
| 1 | GM | 06-02-2011 | 13:49:00 | 33 | 2 | -20.69 | 0.14 |
| 1 | GM | 06-02-2011 | 13:52:14 | 33 | 2 | -19.69 | 2 |
| 1 | GM | 06-02-2011 | 13:55:25 | 33 | 2 | -18.69 | 22.05 |
| 1 | GM | 06-02-2011 | 13:58:40 | 33 | 2 | -17.69 | 435.8 |
| 1 | GM | 06-02-2011 | 14:02:22 | 33 | 2 | -17.69 | 390.9 |
| 1 | GM | 06-02-2011 | 14:05:36 | 33 | 2 | -16.69 | 18.9 |
| 1 | GM | 06-02-2011 | 14:08:50 | 33 | 2 | -15.69 | 23.61 |
| 1 | GM | 06-02-2011 | 14:12:03 | 33 | 2 | -14.69 | 23.53 |
| 1 | GM | 06-02-2011 | 14:15:29 | 33 | 2 | -13.69 | 28.29 |
| 1 | GM | 06-02-2011 | 14:18:44 | 33 | 2 | -11.69 | 28.28 |
| 1 | GM | 06-02-2011 | 14:21:53 | 33 | 2 | -10.69 | 88.62 |
| 1 | GM | 06-02-2011 | 14:25:09 | 33 | 2 | -9.69 | 413.7 |
| 1 | GM | 06-02-2011 | 14:28:22 | 33 | 2 | -8.69 | 67.1 |
| 1 | GM | 06-02-2011 | 14:31:39 | 33 | 2 | -7.69 | 2.71 |
| 1 | GM | 06-02-2011 | 14:34:53 | 33 | 2 | -6.69 | 0.17 |
| 1 | GM | 06-02-2011 | 14:38:05 | 33 | 2 | -5.69 | 0.12 |
| 1 | GM | 06-02-2011 | 14:41:17 | 33 | 2 | -4.69 | 0.07 |
| 1 | GM | 06-02-2011 | 14:44:37 | 33 | 2 | -3.69 | 0 |
| 1 | GM | 06-02-2011 | 14:47:48 | 33 | 2 | -2.69 | 0.19 |
| 1 | GM | 06-02-2011 | 14:51:08 | 33 | 2 | -1.69 | 0.15 |
| 1 | GM | 06-06-2011 | 07:34:49 | 33 | 1 | -22.69 | 0.09 |
| 1 | GM | 06-06-2011 | 07:38:09 | 33 | 1 | -21.69 | 0.08 |
| 1 | GM | 06-06-2011 | 07:41:21 | 33 | 1 | -20.69 | 0.02 |
| 1 | GM | 06-06-2011 | 07:44:35 | 33 | 1 | -19.69 | 1.66 |
| 1 | GM | 06-06-2011 | 07:47:49 | 33 | 1 | -18.69 | 11.96 |
| 1 | GM | 06-06-2011 | 07:51:08 | 33 | 1 | -17.69 | 120.9 |
| 1 | GM | 06-06-2011 | 07:54:21 | 33 | 1 | -16.69 | 114.6 |
| 1 | GM | 06-06-2011 | 07:57:33 | 33 | 1 | -15.69 | 16.05 |
| 1 | GM | 06-06-2011 | 08:00:47 | 33 | 1 | -14.69 | 0.93 |
| 1 | GM | 06-06-2011 | 08:04:00 | 33 | 1 | -13.69 | 1.25 |
| 1 | GM | 06-06-2011 | 08:07:18 | 33 | 1 | -12.69 | 2.49 |
| 1 | GM | 06-06-2011 | 08:10:29 | 33 | 1 | -11.69 | 2.71 |
| 1 | GM | 06-06-2011 | 08:13:43 | 33 | 1 | -10.69 | 4.58 |
| 1 | GM | 06-06-2011 | 08:16:59 | 33 | 1 | -9.69 | 9.2 |
| 1 | GM | 06-06-2011 | 08:20:20 | 33 | 1 | -8.69 | 2.73 |
| 1 | GM | 06-06-2011 | 08:23:35 | 33 | 1 | -7.69 | 0.56 |
| 1 | GM | 06-06-2011 | 08:27:54 | 33 | 1 | -6.69 | 0 |
| 1 | GM | 06-06-2011 | 08:31:10 | 33 | 1 | -5.69 | 0 |
| 1 | GM | 06-06-2011 | 08:34:21 | 33 | 1 | -4.69 | 0.1 |
| 1 | GM | 06-06-2011 | 08:37:34 | 33 | 1 | -3.69 | 0.05 |
| 1 | GM | 06-06-2011 | 08:41:01 | 33 | 1 | -2.69 | 0 |
| 1 | GM | 06-06-2011 | 08:44:09 | 33 | 1 | -1.69 | 0 |

# Appendix Table B 34 - VPU 34

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-02-2011 | 10:00:23 | 34 | 2 | -22.69 | 0 |
| 1 | GM | 06-02-2011 | 10:03:37 | 34 | 2 | -21.69 | 0 |
| 1 | GM | 06-02-2011 | 10:07:24 | 34 | 2 | -20.69 | 0 |
| 1 | GM | 06-02-2011 | 10:10:36 | 34 | 2 | -19.69 | 0.08 |
| 1 | GM | 06-02-2011 | 10:13:51 | 34 | 2 | -18.69 | 0 |
| 1 | GM | 06-02-2011 | 10:17:03 | 34 | 2 | -17.69 | 0.5 |
| 1 | GM | 06-02-2011 | 10:20:19 | 34 | 2 | -16.69 | 0.64 |
| 1 | GM | 06-02-2011 | 10:23:31 | 34 | 2 | -15.69 | 0.24 |
| 1 | GM | 06-02-2011 | 10:26:49 | 34 | 2 | -14.69 | 2.61 |
| 1 | GM | 06-02-2011 | 10:30:02 | 34 | 2 | -13.69 | 9.7 |
| 1 | GM | 06-02-2011 | 10:33:13 | 34 | 2 | -12.69 | 16.88 |
| 1 | GM | 06-02-2011 | 10:36:28 | 34 | 2 | -11.69 | 6.62 |
| 1 | GM | 06-02-2011 | 10:39:41 | 34 | 2 | -10.69 | 0.86 |
| 1 | GM | 06-02-2011 | 10:42:52 | 34 | 2 | -9.69 | 0.65 |
| 1 | GM | 06-02-2011 | 10:46:04 | 34 | 2 | -8.69 | 1.8 |
| 1 | GM | 06-02-2011 | 12:04:40 | 34 | 2 | -7.69 | 0.55 |
| 1 | GM | 06-02-2011 | 12:08:16 | 34 | 2 | -6.69 | 0.82 |
| 1 | GM | 06-02-2011 | 12:11:31 | 34 | 2 | -5.69 | 0.15 |
| 1 | GM | 06-02-2011 | 12:14:44 | 34 | 2 | -4.69 | 0 |
| 1 | GM | 06-02-2011 | 12:17:56 | 34 | 2 | -3.69 | 0.02 |
| 1 | GM | 06-02-2011 | 12:21:05 | 34 | 2 | -2.69 | 0 |
| 1 | GM | 06-02-2011 | 12:24:20 | 34 | 2 | -1.69 | 0 |
| 1 | GM | 06-02-2011 | 12:28:38 | 34 | 1 | -22.69 | 0 |
| 1 | GM | 06-02-2011 | 12:31:49 | 34 | 1 | -21.69 | 0.01 |
| 1 | GM | 06-02-2011 | 12:35:01 | 34 | 1 | -20.69 | 0.01 |
| 1 | GM | 06-02-2011 | 12:38:16 | 34 | 1 | -19.69 | 0 |
| 1 | GM | 06-02-2011 | 12:41:25 | 34 | 1 | -18.69 | 0.61 |
| 1 | GM | 06-02-2011 | 12:44:39 | 34 | 1 | -17.69 | 2.72 |
| 1 | GM | 06-02-2011 | 12:47:50 | 34 | 1 | -16.69 | 10.45 |
| 1 | GM | 06-02-2011 | 12:51:05 | 34 | 1 | -15.69 | 5.42 |
| 1 | GM | 06-02-2011 | 12:54:18 | 34 | 1 | -14.69 | 9.99 |
| 1 | GM | 06-02-2011 | 12:57:33 | 34 | 1 | -13.69 | 35.12 |
| 1 | GM | 06-02-2011 | 13:00:51 | 34 | 1 | -12.69 | 42.03 |
| 1 | GM | 06-02-2011 | 13:04:04 | 34 | 1 | -11.69 | 15.86 |
| 1 | GM | 06-02-2011 | 13:08:08 | 34 | 1 | -10.69 | 1.19 |
| 1 | GM | 06-02-2011 | 13:11:25 | 34 | 1 | -9.69 | 0.57 |
| 1 | GM | 06-02-2011 | 13:14:39 | 34 | 1 | -8.69 | 0.59 |
| 1 | GM | 06-02-2011 | 13:17:54 | 34 | 1 | -7.69 | 0.14 |
| 1 | GM | 06-02-2011 | 13:21:10 | 34 | 1 | -6.69 | 0.26 |
| 1 | GM | 06-02-2011 | 13:24:24 | 34 | 1 | -5.69 | 0.01 |
| 1 | GM | 06-02-2011 | 13:27:35 | 34 | 1 | -4.69 | 0 |
| 1 | GM | 06-02-2011 | 13:30:52 | 34 | 1 | -3.69 | 0.03 |
| 1 | GM | 06-02-2011 | 13:34:05 | 34 | 1 | -2.69 | 0 |
| 1 | GM | 06-02-2011 | 13:37:24 | 34 | 1 | -1.69 | 0.59 |

# Appendix Table B 35 - VPU 35

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-02-2011 | 07:32:21 | 35 | 2 | -22.69 | 0 |
| 1 | GM | 06-02-2011 | 07:36:17 | 35 | 2 | -21.69 | 0.01 |
| 1 | GM | 06-02-2011 | 07:39:27 | 35 | 2 | -20.69 | 0 |
| 1 | GM | 06-02-2011 | 07:42:43 | 35 | 2 | -19.69 | 0.38 |
| 1 | GM | 06-02-2011 | 07:45:55 | 35 | 2 | -18.69 | 0.52 |
| 1 | GM | 06-02-2011 | 07:49:06 | 35 | 2 | -17.69 | 11.16 |
| 1 | GM | 06-02-2011 | 07:52:32 | 35 | 2 | -17.69 | 122 |
| 1 | GM | 06-02-2011 | 07:55:42 | 35 | 2 | -16.69 | 52.23 |
| 1 | GM | 06-02-2011 | 07:58:55 | 35 | 2 | -15.69 | 5.35 |
| 1 | GM | 06-02-2011 | 08:02:05 | 35 | 2 | -14.69 | 9.77 |
| 1 | GM | 06-02-2011 | 08:05:16 | 35 | 2 | -13.69 | 4.41 |
| 1 | GM | 06-02-2011 | 08:08:25 | 35 | 2 | -12.69 | 4.94 |
| 1 | GM | 06-02-2011 | 08:11:40 | 35 | 2 | -11.69 | 14.85 |
| 1 | GM | 06-02-2011 | 08:14:55 | 35 | 2 | -10.69 | 74.17 |
| 1 | GM | 06-02-2011 | 08:18:08 | 35 | 2 | -9.69 | 69.79 |
| 1 | GM | 06-02-2011 | 08:21:22 | 35 | 2 | -8.69 | 28.43 |
| 1 | GM | 06-02-2011 | 08:24:34 | 35 | 2 | -7.69 | 16.17 |
| 1 | GM | 06-02-2011 | 08:27:44 | 35 | 2 | -6.69 | 3.77 |
| 1 | GM | 06-02-2011 | 08:30:56 | 35 | 2 | -5.69 | 0.01 |
| 1 | GM | 06-02-2011 | 08:34:09 | 35 | 2 | -4.69 | 0.04 |
| 1 | GM | 06-02-2011 | 08:37:22 | 35 | 2 | -3.69 | 0.04 |
| 1 | GM | 06-02-2011 | 08:40:34 | 35 | 2 | -2.69 | 0.16 |
| 1 | GM | 06-02-2011 | 08:43:46 | 35 | 2 | -1.69 | 0 |
| 1 | GM | 06-02-2011 | 08:47:57 | 35 | 1 | -22.69 | 0 |
| 1 | GM | 06-02-2011 | 08:51:10 | 35 | 1 | -21.69 | 0 |
| 1 | GM | 06-02-2011 | 08:54:21 | 35 | 1 | -20.69 | 0 |
| 1 | GM | 06-02-2011 | 08:57:35 | 35 | 1 | -19.69 | 0.22 |
| 1 | GM | 06-02-2011 | 09:00:47 | 35 | 1 | -18.69 | 2.72 |
| 1 | GM | 06-02-2011 | 09:04:02 | 35 | 1 | -17.69 | 35.78 |
| 1 | GM | 06-02-2011 | 09:07:13 | 35 | 1 | -16.69 | 32.92 |
| 1 | GM | 06-02-2011 | 09:10:26 | 35 | 1 | -15.69 | 31.02 |
| 1 | GM | 06-02-2011 | 09:13:37 | 35 | 1 | -14.69 | 101.2 |
| 1 | GM | 06-02-2011 | 09:16:50 | 35 | 1 | -13.69 | 50.99 |
| 1 | GM | 06-02-2011 | 09:20:01 | 35 | 1 | -12.69 | 8.52 |
| 1 | GM | 06-02-2011 | 09:23:13 | 35 | 1 | -11.69 | 20.69 |
| 1 | GM | 06-02-2011 | 09:26:25 | 35 | 1 | -10.69 | 29.21 |
| 1 | GM | 06-02-2011 | 09:29:40 | 35 | 1 | -9.69 | 21.48 |
| 1 | GM | 06-02-2011 | 09:32:49 | 35 | 1 | -8.69 | 10.45 |
| 1 | GM | 06-02-2011 | 09:36:14 | 35 | 1 | -7.69 | 6.86 |
| 1 | GM | 06-02-2011 | 09:39:25 | 35 | 1 | -6.69 | 2.63 |
| 1 | GM | 06-02-2011 | 09:42:38 | 35 | 1 | -5.69 | 0.21 |
| 1 | GM | 06-02-2011 | 09:45:53 | 35 | 1 | -4.69 | 0 |
| 1 | GM | 06-02-2011 | 09:49:06 | 35 | 1 | -3.69 | 0.03 |
| 1 | GM | 06-02-2011 | 09:52:19 | 35 | 1 | -2.69 | 0.01 |
| 1 | GM | 06-02-2011 | 09:57:01 | 35 | 1 | -1.69 | 0 |

# Appendix Table B 36 - VPU 36

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-01-2011 | 12:53:08 | 36 | 2 | -22.69 | 0 |
| 1 | GM | 06-01-2011 | 12:56:21 | 36 | 2 | -21.69 | 0.09 |
| 1 | GM | 06-01-2011 | 12:59:35 | 36 | 2 | -20.69 | 0.05 |
| 1 | GM | 06-01-2011 | 13:02:51 | 36 | 2 | -19.69 | 0 |
| 1 | GM | 06-01-2011 | 13:06:02 | 36 | 2 | -18.69 | 0.14 |
| 1 | GM | 06-01-2011 | 13:09:17 | 36 | 2 | -17.69 | 1.99 |
| 1 | GM | 06-01-2011 | 13:12:29 | 36 | 2 | -16.69 | 2.29 |
| 1 | GM | 06-01-2011 | 13:15:41 | 36 | 2 | -15.69 | 1.06 |
| 1 | GM | 06-01-2011 | 13:18:53 | 36 | 2 | -14.69 | 1.34 |
| 1 | GM | 06-01-2011 | 13:22:09 | 36 | 2 | -13.69 | 2.54 |
| 1 | GM | 06-01-2011 | 13:25:24 | 36 | 2 | -12.69 | 2 |
| 1 | GM | 06-01-2011 | 13:28:36 | 36 | 2 | -11.69 | 1.28 |
| 1 | GM | 06-01-2011 | 13:31:48 | 36 | 2 | -10.69 | 0.45 |
| 1 | GM | 06-01-2011 | 13:34:59 | 36 | 2 | -9.69 | 1.59 |
| 1 | GM | 06-01-2011 | 13:38:13 | 36 | 2 | -8.69 | 5 |
| 1 | GM | 06-01-2011 | 13:41:30 | 36 | 2 | -7.69 | 26.85 |
| 1 | GM | 06-01-2011 | 13:44:40 | 36 | 2 | -6.69 | 9.06 |
| 1 | GM | 06-01-2011 | 13:47:55 | 36 | 2 | -5.69 | 0.69 |
| 1 | GM | 06-01-2011 | 13:51:06 | 36 | 2 | -4.69 | 0 |
| 1 | GM | 06-01-2011 | 13:54:17 | 36 | 2 | -3.69 | 0 |
| 1 | GM | 06-01-2011 | 13:57:26 | 36 | 2 | -2.69 | 0 |
| 1 | GM | 06-01-2011 | 14:00:43 | 36 | 2 | -1.69 | 0 |
| 1 | GM | 06-01-2011 | 14:05:34 | 36 | 1 | -22.69 | 0 |
| 1 | GM | 06-01-2011 | 14:08:46 | 36 | 1 | -21.69 | 0.06 |
| 1 | GM | 06-01-2011 | 14:12:03 | 36 | 1 | -20.69 | 0 |
| 1 | GM | 06-01-2011 | 14:15:17 | 36 | 1 | -19.69 | 0.12 |
| 1 | GM | 06-01-2011 | 14:18:31 | 36 | 1 | -18.69 | 0.76 |
| 1 | GM | 06-01-2011 | 14:21:52 | 36 | 1 | -17.69 | 6.09 |
| 1 | GM | 06-01-2011 | 14:25:05 | 36 | 1 | -16.69 | 8.86 |
| 1 | GM | 06-01-2011 | 14:28:18 | 36 | 1 | -15.69 | 3.85 |
| 1 | GM | 06-01-2011 | 14:31:30 | 36 | 1 | -14.69 | 5 |
| 1 | GM | 06-01-2011 | 14:34:41 | 36 | 1 | -13.69 | 20.77 |
| 1 | GM | 06-01-2011 | 14:37:53 | 36 | 1 | -12.69 | 14.74 |
| 1 | GM | 06-01-2011 | 14:41:15 | 36 | 1 | -11.69 | 5.16 |
| 1 | GM | 06-01-2011 | 14:44:29 | 36 | 1 | -10.69 | 2.48 |
| 1 | GM | 06-01-2011 | 14:47:40 | 36 | 1 | -9.69 | 1.3 |
| 1 | GM | 06-01-2011 | 14:50:50 | 36 | 1 | -8.69 | 8.84 |
| 1 | GM | 06-01-2011 | 14:54:03 | 36 | 1 | -7.69 | 8.55 |
| 1 | GM | 06-01-2011 | 14:57:16 | 36 | 1 | -6.69 | 1.57 |
| 1 | GM | 06-01-2011 | 15:00:27 | 36 | 1 | -5.69 | 0 |
| 1 | GM | 06-01-2011 | 15:03:41 | 36 | 1 | -4.69 | 0 |
| 1 | GM | 06-01-2011 | 15:06:55 | 36 | 1 | -3.69 | 0 |
| 1 | GM | 06-01-2011 | 15:10:05 | 36 | 1 | -2.69 | 0.01 |
| 1 | GM | 06-01-2011 | 15:13:19 | 36 | 1 | -1.69 | 0.03 |
| 1 | GM | 06-01-2011 | 15:14:04 | 36 | 1 | -1.69 | 0.15 |

# Appendix Table B 37 - VPU 37

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-01-2011 | 09:15:30 | 37 | 2 | -22.69 | 0.16 |
| 1 | GM | 06-01-2011 | 09:18:47 | 37 | 2 | -21.69 | 0.02 |
| 1 | GM | 06-01-2011 | 09:21:58 | 37 | 2 | -20.69 | 0 |
| 1 | GM | 06-01-2011 | 09:25:13 | 37 | 2 | -19.69 | 0.03 |
| 1 | GM | 06-01-2011 | 09:28:26 | 37 | 2 | -18.69 | 0.73 |
| 1 | GM | 06-01-2011 | 09:31:37 | 37 | 2 | -17.69 | 6.56 |
| 1 | GM | 06-01-2011 | 09:34:47 | 37 | 2 | -16.69 | 36.21 |
| 1 | GM | 06-01-2011 | 09:37:58 | 37 | 2 | -15.69 | 35.76 |
| 1 | GM | 06-01-2011 | 09:41:17 | 37 | 2 | -14.69 | 26.93 |
| 1 | GM | 06-01-2011 | 09:44:28 | 37 | 2 | -13.69 | 47.44 |
| 1 | GM | 06-01-2011 | 09:47:40 | 37 | 2 | -12.69 | 15.03 |
| 1 | GM | 06-01-2011 | 09:50:53 | 37 | 2 | -11.69 | 269.3 |
| 1 | GM | 06-01-2011 | 09:54:06 | 37 | 2 | -10.69 | 1935 |
| 1 | GM | 06-01-2011 | 09:57:19 | 37 | 2 | -9.69 | 268.6 |
| 1 | GM | 06-01-2011 | 10:00:31 | 37 | 2 | -8.69 | 10.19 |
| 1 | GM | 06-01-2011 | 10:03:47 | 37 | 2 | -7.69 | 1.33 |
| 1 | GM | 06-01-2011 | 10:06:58 | 37 | 2 | -6.69 | 0.52 |
| 1 | GM | 06-01-2011 | 10:10:14 | 37 | 2 | -5.69 | 0.04 |
| 1 | GM | 06-01-2011 | 10:13:26 | 37 | 2 | -4.69 | 0 |
| 1 | GM | 06-01-2011 | 10:16:37 | 37 | 2 | -3.69 | 0 |
| 1 | GM | 06-01-2011 | 10:19:49 | 37 | 2 | -2.69 | 0.04 |
| 1 | GM | 06-01-2011 | 10:23:01 | 37 | 2 | -1.69 | 0.15 |
| 1 | GM | 06-01-2011 | 10:28:27 | 37 | 1 | -22.69 | 0.39 |
| 1 | GM | 06-01-2011 | 10:31:40 | 37 | 1 | -21.69 | 0 |
| 1 | GM | 06-01-2011 | 10:34:55 | 37 | 1 | -20.69 | 0 |
| 1 | GM | 06-01-2011 | 10:38:06 | 37 | 1 | -19.69 | 0 |
| 1 | GM | 06-01-2011 | 10:41:18 | 37 | 1 | -18.69 | 0.24 |
| 1 | GM | 06-01-2011 | 10:44:31 | 37 | 1 | -17.69 | 5.04 |
| 1 | GM | 06-01-2011 | 11:59:39 | 37 | 1 | -16.69 | 9.79 |
| 1 | GM | 06-01-2011 | 12:02:51 | 37 | 1 | -15.69 | 4.72 |
| 1 | GM | 06-01-2011 | 12:06:03 | 37 | 1 | -14.69 | 3.33 |
| 1 | GM | 06-01-2011 | 12:09:15 | 37 | 1 | -13.69 | 2.43 |
| 1 | GM | 06-01-2011 | 12:12:26 | 37 | 1 | -12.69 | 2.47 |
| 1 | GM | 06-01-2011 | 12:15:40 | 37 | 1 | -11.69 | 27.14 |
| 1 | GM | 06-01-2011 | 12:18:56 | 37 | 1 | -10.69 | 169.1 |
| 1 | GM | 06-01-2011 | 12:22:09 | 37 | 1 | -9.69 | 54.21 |
| 1 | GM | 06-01-2011 | 12:25:22 | 37 | 1 | -8.69 | 3.47 |
| 1 | GM | 06-01-2011 | 12:28:36 | 37 | 1 | -7.69 | 4.55 |
| 1 | GM | 06-01-2011 | 12:31:50 | 37 | 1 | -6.69 | 0.89 |
| 1 | GM | 06-01-2011 | 12:35:21 | 37 | 1 | -5.69 | 0.07 |
| 1 | GM | 06-01-2011 | 12:38:32 | 37 | 1 | -4.69 | 0.01 |
| 1 | GM | 06-01-2011 | 12:41:42 | 37 | 1 | -3.69 | 0.04 |
| 1 | GM | 06-01-2011 | 12:44:56 | 37 | 1 | -2.69 | 0.09 |
| 1 | GM | 06-01-2011 | 12:48:07 | 37 | 1 | -1.69 | 0.03 |

# Appendix Table B 38 - VPU 38

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-31-2011 | 15:10:18 | 38 | 2 | -22.69 | 0.1 |
| 1 | GM | 05-31-2011 | 15:14:06 | 38 | 2 | -21.69 | 0 |
| 1 | GM | 05-31-2011 | 15:17:19 | 38 | 2 | -20.69 | 0 |
| 1 | GM | 05-31-2011 | 15:20:37 | 38 | 2 | -19.69 | 1.46 |
| 1 | GM | 05-31-2011 | 15:23:54 | 38 | 2 | -18.69 | 52.19 |
| 1 | GM | 05-31-2011 | 15:27:09 | 38 | 2 | -17.69 | 1026 |
| 1 | GM | 05-31-2011 | 15:30:24 | 38 | 2 | -16.69 | 1030 |
| 1 | GM | 05-31-2011 | 15:33:39 | 38 | 2 | -15.69 | 51.72 |
| 1 | GM | 05-31-2011 | 15:36:58 | 38 | 2 | -14.69 | 10.06 |
| 1 | GM | 05-31-2011 | 15:40:37 | 38 | 2 | -13.69 | 1.91 |
| 1 | GM | 06-01-2011 | 07:21:58 | 38 | 2 | -12.69 | 2.54 |
| 1 | GM | 06-01-2011 | 07:25:14 | 38 | 2 | -11.69 | 7.67 |
| 1 | GM | 06-01-2011 | 07:28:31 | 38 | 2 | -10.69 | 2.21 |
| 1 | GM | 06-01-2011 | 07:31:44 | 38 | 2 | -9.69 | 0.34 |
| 1 | GM | 06-01-2011 | 07:34:56 | 38 | 2 | -8.69 | 0.59 |
| 1 | GM | 06-01-2011 | 07:38:08 | 38 | 2 | -7.69 | 0.68 |
| 1 | GM | 06-01-2011 | 07:41:20 | 38 | 2 | -6.69 | 0.17 |
| 1 | GM | 06-01-2011 | 07:44:32 | 38 | 2 | -5.69 | 0 |
| 1 | GM | 06-01-2011 | 07:47:44 | 38 | 2 | -4.69 | 0 |
| 1 | GM | 06-01-2011 | 07:50:56 | 38 | 2 | -3.69 | 0 |
| 1 | GM | 06-01-2011 | 07:54:10 | 38 | 2 | -2.69 | 0.04 |
| 1 | GM | 06-01-2011 | 07:58:33 | 38 | 2 | -1.69 | 0 |
| 1 | GM | 06-01-2011 | 08:02:22 | 38 | 1 | -22.69 | 0 |
| 1 | GM | 06-01-2011 | 08:05:33 | 38 | 1 | -21.69 | 0 |
| 1 | GM | 06-01-2011 | 08:08:46 | 38 | 1 | -20.69 | 0.07 |
| 1 | GM | 06-01-2011 | 08:12:01 | 38 | 1 | -19.69 | 1.37 |
| 1 | GM | 06-01-2011 | 08:15:14 | 38 | 1 | -18.69 | 54.15 |
| 1 | GM | 06-01-2011 | 08:18:30 | 38 | 1 | -17.69 | 1456 |
| 1 | GM | 06-01-2011 | 08:21:40 | 38 | 1 | -16.69 | 2146 |
| 1 | GM | 06-01-2011 | 08:24:59 | 38 | 1 | -15.69 | 169.6 |
| 1 | GM | 06-01-2011 | 08:28:15 | 38 | 1 | -14.69 | 43.73 |
| 1 | GM | 06-01-2011 | 08:31:27 | 38 | 1 | -13.69 | 45.17 |
| 1 | GM | 06-01-2011 | 08:34:41 | 38 | 1 | -12.69 | 4.17 |
| 1 | GM | 06-01-2011 | 08:38:01 | 38 | 1 | -11.69 | 3.86 |
| 1 | GM | 06-01-2011 | 08:41:22 | 38 | 1 | -10.69 | 4.42 |
| 1 | GM | 06-01-2011 | 08:44:37 | 38 | 1 | -9.69 | 1.29 |
| 1 | GM | 06-01-2011 | 08:47:56 | 38 | 1 | -8.69 | 0.05 |
| 1 | GM | 06-01-2011 | 08:51:09 | 38 | 1 | -7.69 | 0.01 |
| 1 | GM | 06-01-2011 | 08:54:27 | 38 | 1 | -6.69 | 0.01 |
| 1 | GM | 06-01-2011 | 08:57:40 | 38 | 1 | -5.69 | 0.28 |
| 1 | GM | 06-01-2011 | 09:00:57 | 38 | 1 | -4.69 | 0 |
| 1 | GM | 06-01-2011 | 09:04:11 | 38 | 1 | -3.69 | 0 |
| 1 | GM | 06-01-2011 | 09:07:22 | 38 | 1 | -2.69 | 0.01 |
| 1 | GM | 06-01-2011 | 09:11:48 | 38 | 1 | -1.69 | 0.05 |

# Appendix Table B 39 - VPU 39

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 05-31-2011 | 12:44:52 | 39 | 2 | -22.69 | 0 |
| 1 | GM | 05-31-2011 | 12:48:12 | 39 | 2 | -21.69 | 0 |
| 1 | GM | 05-31-2011 | 12:51:37 | 39 | 2 | -20.69 | 0.22 |
| 1 | GM | 05-31-2011 | 12:54:49 | 39 | 2 | -19.69 | 0.15 |
| 1 | GM | 05-31-2011 | 12:58:03 | 39 | 2 | -18.69 | 0.22 |
| 1 | GM | 05-31-2011 | 13:01:32 | 39 | 2 | -17.69 | 2.87 |
| 1 | GM | 05-31-2011 | 13:04:48 | 39 | 2 | -16.69 | 6.54 |
| 1 | GM | 05-31-2011 | 13:08:02 | 39 | 2 | -15.69 | 6.77 |
| 1 | GM | 05-31-2011 | 13:11:16 | 39 | 2 | -14.69 | 6.28 |
| 1 | GM | 05-31-2011 | 13:14:32 | 39 | 2 | -13.69 | 10.62 |
| 1 | GM | 05-31-2011 | 13:17:46 | 39 | 2 | -12.69 | 21.27 |
| 1 | GM | 05-31-2011 | 13:21:05 | 39 | 2 | -11.69 | 9.75 |
| 1 | GM | 05-31-2011 | 13:24:22 | 39 | 2 | -10.69 | 7.22 |
| 1 | GM | 05-31-2011 | 13:27:39 | 39 | 2 | -9.69 | 14.41 |
| 1 | GM | 05-31-2011 | 13:30:54 | 39 | 2 | -8.69 | 0.98 |
| 1 | GM | 05-31-2011 | 13:34:09 | 39 | 2 | -7.69 | 0 |
| 1 | GM | 05-31-2011 | 13:37:24 | 39 | 2 | -6.69 | 0.17 |
| 1 | GM | 05-31-2011 | 13:40:35 | 39 | 2 | -5.69 | 0 |
| 1 | GM | 05-31-2011 | 13:43:53 | 39 | 2 | -4.69 | 0 |
| 1 | GM | 05-31-2011 | 13:47:07 | 39 | 2 | -3.69 | 0 |
| 1 | GM | 05-31-2011 | 13:50:23 | 39 | 2 | -2.69 | 0 |
| 1 | GM | 05-31-2011 | 13:53:37 | 39 | 2 | -1.69 | 0.09 |
| 1 | GM | 05-31-2011 | 13:57:42 | 39 | 1 | -22.69 | 0 |
| 1 | GM | 05-31-2011 | 14:00:58 | 39 | 1 | -21.69 | 0 |
| 1 | GM | 05-31-2011 | 14:04:10 | 39 | 1 | -20.69 | 0.1 |
| 1 | GM | 05-31-2011 | 14:07:23 | 39 | 1 | -19.69 | 0 |
| 1 | GM | 05-31-2011 | 14:10:40 | 39 | 1 | -18.69 | 0.13 |
| 1 | GM | 05-31-2011 | 14:13:51 | 39 | 1 | -17.69 | 6.96 |
| 1 | GM | 05-31-2011 | 14:17:04 | 39 | 1 | -16.69 | 13.61 |
| 1 | GM | 05-31-2011 | 14:20:19 | 39 | 1 | -15.69 | 16.93 |
| 1 | GM | 05-31-2011 | 14:23:33 | 39 | 1 | -14.69 | 15.28 |
| 1 | GM | 05-31-2011 | 14:26:46 | 39 | 1 | -13.69 | 17.9 |
| 1 | GM | 05-31-2011 | 14:30:00 | 39 | 1 | -12.69 | 11.38 |
| 1 | GM | 05-31-2011 | 14:33:14 | 39 | 1 | -11.69 | 7.61 |
| 1 | GM | 05-31-2011 | 14:36:27 | 39 | 1 | -10.69 | 4.92 |
| 1 | GM | 05-31-2011 | 14:39:42 | 39 | 1 | -9.69 | 0.82 |
| 1 | GM | 05-31-2011 | 14:42:57 | 39 | 1 | -8.69 | 0.05 |
| 1 | GM | 05-31-2011 | 14:46:12 | 39 | 1 | -7.69 | 0 |
| 1 | GM | 05-31-2011 | 14:49:27 | 39 | 1 | -6.69 | 0.04 |
| 1 | GM | 05-31-2011 | 14:52:42 | 39 | 1 | -5.69 | 0.01 |
| 1 | GM | 05-31-2011 | 14:55:56 | 39 | 1 | -4.69 | 0 |
| 1 | GM | 05-31-2011 | 14:59:07 | 39 | 1 | -3.69 | 0 |
| 1 | GM | 05-31-2011 | 15:02:21 | 39 | 1 | -2.69 | 0 |
| 1 | GM | 05-31-2011 | 15:05:55 | 39 | 1 | -1.69 | 0.02 |

# Appendix Table B 40 - VPU 40

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-20-2011 | 09:04:12 | 40 | 1 | -22.69 | 0 |
| 1 | GM | 06-20-2011 | 09:07:24 | 40 | 1 | -21.69 | 0.1 |
| 1 | GM | 06-20-2011 | 09:10:36 | 40 | 1 | -20.69 | 0.02 |
| 1 | GM | 06-20-2011 | 09:13:49 | 40 | 1 | -19.69 | 0 |
| 1 | GM | 06-20-2011 | 09:17:04 | 40 | 1 | -18.69 | 0.56 |
| 1 | GM | 06-20-2011 | 09:20:15 | 40 | 1 | -17.69 | 0.03 |
| 1 | GM | 06-20-2011 | 09:23:26 | 40 | 1 | -16.69 | 0.2 |
| 1 | GM | 06-20-2011 | 09:26:39 | 40 | 1 | -15.69 | 0.4 |
| 1 | GM | 06-20-2011 | 09:29:50 | 40 | 1 | -14.69 | 0.35 |
| 1 | GM | 06-20-2011 | 09:33:02 | 40 | 1 | -13.69 | 0.39 |
| 1 | GM | 06-20-2011 | 09:36:12 | 40 | 1 | -12.69 | 0.33 |
| 1 | GM | 06-20-2011 | 09:39:26 | 40 | 1 | -11.69 | 0.42 |
| 1 | GM | 06-20-2011 | 09:42:36 | 40 | 1 | -10.69 | 0.24 |
| 1 | GM | 06-20-2011 | 09:45:51 | 40 | 1 | -9.69 | 0.76 |
| 1 | GM | 06-20-2011 | 09:49:02 | 40 | 1 | -8.69 | 0.54 |
| 1 | GM | 06-20-2011 | 09:52:26 | 40 | 1 | -8.69 | 0.07 |
| 1 | GM | 06-20-2011 | 09:55:39 | 40 | 1 | -7.69 | 0.02 |
| 1 | GM | 06-20-2011 | 09:58:51 | 40 | 1 | -6.69 | 0 |
| 1 | GM | 06-20-2011 | 10:02:05 | 40 | 1 | -5.69 | 0.01 |
| 1 | GM | 06-20-2011 | 10:05:19 | 40 | 1 | -4.69 | 0.01 |
| 1 | GM | 06-20-2011 | 10:08:30 | 40 | 1 | -3.69 | 0 |
| 1 | GM | 06-20-2011 | 10:11:41 | 40 | 1 | -2.69 | 0.13 |
| 1 | GM | 06-20-2011 | 10:14:55 | 40 | 1 | -1.69 | 0 |

# Appendix Table B 41 - VPU 41

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-13-2011 | 09:24:55 | 41 | 2 | -22.69 | 0 |
| 1 | GM | 06-13-2011 | 09:28:08 | 41 | 2 | -21.69 | 0.15 |
| 1 | GM | 06-13-2011 | 09:31:26 | 41 | 2 | -20.69 | 0.01 |
| 1 | GM | 06-13-2011 | 09:34:41 | 41 | 2 | -19.69 | 0 |
| 1 | GM | 06-13-2011 | 09:37:54 | 41 | 2 | -18.69 | 0 |
| 1 | GM | 06-13-2011 | 09:41:13 | 41 | 2 | -17.69 | 0.09 |
| 1 | GM | 06-13-2011 | 09:44:27 | 41 | 2 | -16.69 | 0.93 |
| 1 | GM | 06-13-2011 | 09:47:41 | 41 | 2 | -15.69 | 1.28 |
| 1 | GM | 06-13-2011 | 09:50:56 | 41 | 2 | -14.69 | 0.94 |
| 1 | GM | 06-13-2011 | 09:54:11 | 41 | 2 | -13.69 | 3.42 |
| 1 | GM | 06-13-2011 | 09:57:25 | 41 | 2 | -12.69 | 20.16 |
| 1 | GM | 06-13-2011 | 10:00:40 | 41 | 2 | -11.69 | 33.77 |
| 1 | GM | 06-13-2011 | 10:03:52 | 41 | 2 | -10.69 | 23.18 |
| 1 | GM | 06-13-2011 | 10:07:06 | 41 | 2 | -9.69 | 22.43 |
| 1 | GM | 06-13-2011 | 10:10:21 | 41 | 2 | -8.69 | 1.71 |
| 1 | GM | 06-13-2011 | 10:13:37 | 41 | 2 | -7.69 | 0.95 |
| 1 | GM | 06-13-2011 | 10:16:47 | 41 | 2 | -6.69 | 6.89 |
| 1 | GM | 06-13-2011 | 10:19:59 | 41 | 2 | -5.69 | 2.23 |
| 1 | GM | 06-13-2011 | 10:23:10 | 41 | 2 | -4.69 | 0.24 |
| 1 | GM | 06-13-2011 | 10:26:23 | 41 | 2 | -3.69 | 0 |
| 1 | GM | 06-13-2011 | 10:29:34 | 41 | 2 | -2.69 | 0.02 |
| 1 | GM | 06-13-2011 | 10:32:56 | 41 | 2 | -2.69 | 0 |
| 1 | GM | 06-13-2011 | 10:36:08 | 41 | 2 | -1.69 | 0.39 |
| 1 | GM | 06-13-2011 | 10:40:46 | 41 | 1 | -22.69 | 0 |
| 1 | GM | 06-13-2011 | 10:43:59 | 41 | 1 | -21.69 | 0.07 |
| 1 | GM | 06-13-2011 | 12:02:42 | 41 | 1 | -20.69 | 0.04 |
| 1 | GM | 06-13-2011 | 12:05:56 | 41 | 1 | -19.69 | 0 |
| 1 | GM | 06-13-2011 | 12:09:23 | 41 | 1 | -18.69 | 0.03 |
| 1 | GM | 06-13-2011 | 12:13:03 | 41 | 1 | -17.69 | 0 |
| 1 | GM | 06-13-2011 | 12:16:27 | 41 | 1 | -16.69 | 0.01 |
| 1 | GM | 06-13-2011 | 12:19:46 | 41 | 1 | -15.69 | 0.01 |
| 1 | GM | 06-13-2011 | 12:22:58 | 41 | 1 | -14.69 | 0.15 |
| 1 | GM | 06-13-2011 | 12:26:14 | 41 | 1 | -13.69 | 0.64 |
| 1 | GM | 06-13-2011 | 12:29:26 | 41 | 1 | -12.69 | 1.01 |
| 1 | GM | 06-13-2011 | 12:32:37 | 41 | 1 | -11.69 | 0.09 |
| 1 | GM | 06-13-2011 | 12:35:49 | 41 | 1 | -10.69 | 0.02 |
| 1 | GM | 06-13-2011 | 12:39:01 | 41 | 1 | -9.69 | 0.13 |
| 1 | GM | 06-13-2011 | 12:42:12 | 41 | 1 | -8.69 | 0 |
| 1 | GM | 06-13-2011 | 12:45:25 | 41 | 1 | -7.69 | 0.4 |
| 1 | GM | 06-13-2011 | 12:48:39 | 41 | 1 | -6.69 | 0.03 |
| 1 | GM | 06-13-2011 | 12:51:51 | 41 | 1 | -15.69 | 0.02 |
| 1 | GM | 06-13-2011 | 12:55:04 | 41 | 1 | -14.69 | 0.01 |
| 1 | GM | 06-13-2011 | 12:58:17 | 41 | 1 | -13.69 | 0 |
| 1 | GM | 06-13-2011 | 13:01:31 | 41 | 1 | -12.69 | 0.01 |
| 1 | GM | 06-13-2011 | 13:04:43 | 41 | 1 | -11.69 | 0 |

# Appendix Table B 42 - VPU 42

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-09-2011 | 15:02:31 | 42 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-09-2011 | 15:05:45 | 42 | 2 | -21.69 | 0 |
| 1 | GM | 06-09-2011 | 15:08:58 | 42 | 2 | -20.69 | 0 |
| 1 | GM | 06-09-2011 | 15:12:09 | 42 | 2 | -19.69 | 0.07 |
| 1 | GM | 06-09-2011 | 15:15:21 | 42 | 2 | -18.69 | 2 |
| 1 | GM | 06-09-2011 | 15:18:31 | 42 | 2 | -17.69 | 19.91 |
| 1 | GM | 06-09-2011 | 15:21:45 | 42 | 2 | -16.69 | 18.64 |
| 1 | GM | 06-09-2011 | 15:24:59 | 42 | 2 | -15.69 | 73.24 |
| 1 | GM | 06-09-2011 | 15:28:11 | 42 | 2 | -14.69 | 182.1 |
| 1 | GM | 06-09-2011 | 15:31:33 | 42 | 2 | -13.69 | 604.9 |
| 1 | GM | 06-13-2011 | 07:33:11 | 42 | 2 | -12.69 | 181.3 |
| 1 | GM | 06-13-2011 | 07:36:22 | 42 | 2 | -11.69 | 118.7 |
| 1 | GM | 06-13-2011 | 07:39:37 | 42 | 2 | -10.69 | 53.14 |
| 1 | GM | 06-13-2011 | 07:42:51 | 42 | 2 | -9.69 | 19.15 |
| 1 | GM | 06-13-2011 | 07:46:03 | 42 | 2 | -8.69 | 5.19 |
| 1 | GM | 06-13-2011 | 07:49:26 | 42 | 2 | -7.69 | 1.68 |
| 1 | GM | 06-13-2011 | 07:52:39 | 42 | 2 | -6.69 | 0.36 |
| 1 | GM | 06-13-2011 | 07:55:54 | 42 | 2 | -5.69 | 0.05 |
| 1 | GM | 06-13-2011 | 07:59:09 | 42 | 2 | -4.69 | 0.04 |
| 1 | GM | 06-13-2011 | 08:02:23 | 42 | 2 | -3.69 | 0.06 |
| 1 | GM | 06-13-2011 | 08:05:36 | 42 | 2 | -2.69 | 0 |
| 1 | GM | 06-13-2011 | 08:08:48 | 42 | 2 | -1.69 | 0.04 |
| 1 | GM | 06-13-2011 | 08:12:57 | 42 | 1 | -22.69 | 0 |
| 1 | GM | 06-13-2011 | 08:16:11 | 42 | 1 | -21.69 | 0 |
| 1 | GM | 06-13-2011 | 08:19:21 | 42 | 1 | -20.69 | 0 |
| 1 | GM | 06-13-2011 | 08:22:34 | 42 | 1 | -19.69 | 0.3 |
| 1 | GM | 06-13-2011 | 08:25:48 | 42 | 1 | -18.69 | 0 |
| 1 | GM | 06-13-2011 | 08:29:02 | 42 | 1 | -17.69 | 0.22 |
| 1 | GM | 06-13-2011 | 08:32:14 | 42 | 1 | -16.69 | 1.49 |
| 1 | GM | 06-13-2011 | 08:35:38 | 42 | 1 | -15.69 | 16.1 |
| 1 | GM | 06-13-2011 | 08:38:48 | 42 | 1 | -14.69 | 45.62 |
| 1 | GM | 06-13-2011 | 08:42:02 | 42 | 1 | -13.69 | 105.7 |
| 1 | GM | 06-13-2011 | 08:45:14 | 42 | 1 | -12.69 | 66.11 |
| 1 | GM | 06-13-2011 | 08:48:25 | 42 | 1 | -11.69 | 71.25 |
| 1 | GM | 06-13-2011 | 08:51:38 | 42 | 1 | -10.69 | 155.8 |
| 1 | GM | 06-13-2011 | 08:54:50 | 42 | 1 | -9.69 | 46.17 |
| 1 | GM | 06-13-2011 | 08:58:01 | 42 | 1 | -8.69 | 4.44 |
| 1 | GM | 06-13-2011 | 09:01:13 | 42 | 1 | -7.69 | 0.3 |
| 1 | GM | 06-13-2011 | 09:04:25 | 42 | 1 | -6.69 | 0.1 |
| 1 | GM | 06-13-2011 | 09:07:36 | 42 | 1 | -5.69 | 0.01 |
| 1 | GM | 06-13-2011 | 09:10:46 | 42 | 1 | -4.69 | 0 |
| 1 | GM | 06-13-2011 | 09:13:59 | 42 | 1 | -3.69 | 0.07 |
| 1 | GM | 06-13-2011 | 09:17:11 | 42 | 1 | -2.69 | 0.01 |
| 1 | GM | 06-13-2011 | 09:20:22 | 42 | 1 | -1.69 | 0.01 |

# Appendix Table B 43 - VPU 43

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-09-2011 | 12:36:09 | 43 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-09-2011 | 12:39:22 | 43 | 2 | -21.69 | 0 |
| 1 | GM | 06-09-2011 | 12:42:34 | 43 | 2 | -20.69 | 0 |
| 1 | GM | 06-09-2011 | 12:45:48 | 43 | 2 | -19.69 | 0.04 |
| 1 | GM | 06-09-2011 | 12:49:00 | 43 | 2 | -18.69 | 0.87 |
| 1 | GM | 06-09-2011 | 12:52:14 | 43 | 2 | -17.69 | 25.47 |
| 1 | GM | 06-09-2011 | 12:55:28 | 43 | 2 | -16.69 | 454.8 |
| 1 | GM | 06-09-2011 | 12:58:40 | 43 | 2 | -15.69 | 1580 |
| 1 | GM | 06-09-2011 | 13:01:58 | 43 | 2 | -14.69 | 694.6 |
| 1 | GM | 06-09-2011 | 13:05:12 | 43 | 2 | -13.69 | 406.9 |
| 1 | GM | 06-09-2011 | 13:08:28 | 43 | 2 | -12.69 | 566.5 |
| 1 | GM | 06-09-2011 | 13:11:44 | 43 | 2 | -11.69 | 374.6 |
| 1 | GM | 06-09-2011 | 13:14:59 | 43 | 2 | -10.69 | 103.8 |
| 1 | GM | 06-09-2011 | 13:18:11 | 43 | 2 | -9.69 | 23.38 |
| 1 | GM | 06-09-2011 | 13:21:34 | 43 | 2 | -8.69 | 3.54 |
| 1 | GM | 06-09-2011 | 13:24:46 | 43 | 2 | -7.69 | 2.82 |
| 1 | GM | 06-09-2011 | 13:27:58 | 43 | 2 | -6.69 | 0.68 |
| 1 | GM | 06-09-2011 | 13:31:12 | 43 | 2 | -5.69 | 0.1 |
| 1 | GM | 06-09-2011 | 13:34:25 | 43 | 2 | -4.69 | 0.17 |
| 1 | GM | 06-09-2011 | 13:37:36 | 43 | 2 | -3.69 | 0.19 |
| 1 | GM | 06-09-2011 | 13:40:47 | 43 | 2 | -2.69 | 0 |
| 1 | GM | 06-09-2011 | 13:43:59 | 43 | 2 | -1.69 | 0.02 |
| 1 | GM | 06-09-2011 | 13:48:45 | 43 | 1 | -22.69 | 0.2 |
| 1 | GM | 06-09-2011 | 13:52:20 | 43 | 1 | -21.69 | 0.02 |
| 1 | GM | 06-09-2011 | 13:55:34 | 43 | 1 | -20.69 | 0.01 |
| 1 | GM | 06-09-2011 | 13:58:44 | 43 | 1 | -19.69 | 0.11 |
| 1 | GM | 06-09-2011 | 14:01:54 | 43 | 1 | -18.69 | 0.36 |
| 1 | GM | 06-09-2011 | 14:05:15 | 43 | 1 | -17.69 | 18.59 |
| 1 | GM | 06-09-2011 | 14:08:27 | 43 | 1 | -16.69 | 352.8 |
| 1 | GM | 06-09-2011 | 14:11:42 | 43 | 1 | -15.69 | 2270 |
| 1 | GM | 06-09-2011 | 14:15:10 | 43 | 1 | -14.69 | 1610 |
| 1 | GM | 06-09-2011 | 14:18:25 | 43 | 1 | -13.69 | 489.3 |
| 1 | GM | 06-09-2011 | 14:21:42 | 43 | 1 | -12.69 | 240.9 |
| 1 | GM | 06-09-2011 | 14:24:57 | 43 | 1 | -11.69 | 210.2 |
| 1 | GM | 06-09-2011 | 14:28:09 | 43 | 1 | -10.69 | 112.4 |
| 1 | GM | 06-09-2011 | 14:31:22 | 43 | 1 | -9.69 | 18.82 |
| 1 | GM | 06-09-2011 | 14:34:34 | 43 | 1 | -8.69 | 14.85 |
| 1 | GM | 06-09-2011 | 14:37:45 | 43 | 1 | -7.69 | 59.52 |
| 1 | GM | 06-09-2011 | 14:40:57 | 43 | 1 | -6.69 | 23.06 |
| 1 | GM | 06-09-2011 | 14:44:11 | 43 | 1 | -5.69 | 1.64 |
| 1 | GM | 06-09-2011 | 14:47:26 | 43 | 1 | -4.69 | 0 |
| 1 | GM | 06-09-2011 | 14:50:38 | 43 | 1 | -3.69 | 0 |
| 1 | GM | 06-09-2011 | 14:53:53 | 43 | 1 | -2.69 | 0.26 |
| 1 | GM | 06-09-2011 | 14:57:05 | 43 | 1 | -1.69 | 0 |

# Appendix Table B 44 - VPU 44

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-09-2011 | 09:05:18 | 44 | 2 | -22.69 | 0.02 |
| 1 | GM | 06-09-2011 | 09:08:38 | 44 | 2 | -21.69 | 0 |
| 1 | GM | 06-09-2011 | 09:11:50 | 44 | 2 | -20.69 | 0.32 |
| 1 | GM | 06-09-2011 | 09:15:09 | 44 | 2 | -19.69 | 1.99 |
| 1 | GM | 06-09-2011 | 09:18:21 | 44 | 2 | -18.69 | 62.21 |
| 1 | GM | 06-09-2011 | 09:21:32 | 44 | 2 | -17.69 | 846.9 |
| 1 | GM | 06-09-2011 | 09:24:44 | 44 | 2 | -16.69 | 1126 |
| 1 | GM | 06-09-2011 | 09:28:01 | 44 | 2 | -15.69 | 2023 |
| 1 | GM | 06-09-2011 | 09:31:13 | 44 | 2 | -14.69 | 1151 |
| 1 | GM | 06-09-2011 | 09:34:23 | 44 | 2 | -13.69 | 2026 |
| 1 | GM | 06-09-2011 | 09:37:35 | 44 | 2 | -12.69 | 3603 |
| 1 | GM | 06-09-2011 | 09:40:48 | 44 | 2 | -11.69 | 8909 |
| 1 | GM | 06-09-2011 | 09:44:00 | 44 | 2 | -10.69 | 4102 |
| 1 | GM | 06-09-2011 | 09:47:12 | 44 | 2 | -9.69 | 672.7 |
| 1 | GM | 06-09-2011 | 09:50:23 | 44 | 2 | -8.69 | 48.15 |
| 1 | GM | 06-09-2011 | 09:53:38 | 44 | 2 | -7.69 | 1.62 |
| 1 | GM | 06-09-2011 | 09:57:03 | 44 | 2 | -6.69 | 0.29 |
| 1 | GM | 06-09-2011 | 10:00:13 | 44 | 2 | -5.69 | 0.01 |
| 1 | GM | 06-09-2011 | 10:03:28 | 44 | 2 | -4.69 | 0.01 |
| 1 | GM | 06-09-2011 | 10:06:39 | 44 | 2 | -3.69 | 0 |
| 1 | GM | 06-09-2011 | 10:09:51 | 44 | 2 | -2.69 | 0.02 |
| 1 | GM | 06-09-2011 | 10:13:07 | 44 | 2 | -1.69 | 0 |
| 1 | GM | 06-09-2011 | 10:17:44 | 44 | 1 | -22.69 | 0.15 |
| 1 | GM | 06-09-2011 | 10:21:02 | 44 | 1 | -21.69 | 0 |
| 1 | GM | 06-09-2011 | 10:24:15 | 44 | 1 | -20.69 | 0.02 |
| 1 | GM | 06-09-2011 | 10:27:29 | 44 | 1 | -19.69 | 0.66 |
| 1 | GM | 06-09-2011 | 10:30:41 | 44 | 1 | -18.69 | 10.39 |
| 1 | GM | 06-09-2011 | 10:33:59 | 44 | 1 | -17.69 | 64.78 |
| 1 | GM | 06-09-2011 | 10:37:10 | 44 | 1 | -16.69 | 109.7 |
| 1 | GM | 06-09-2011 | 10:40:34 | 44 | 1 | -15.69 | 165.5 |
| 1 | GM | 06-09-2011 | 10:43:48 | 44 | 1 | -14.69 | 199.4 |
| 1 | GM | 06-09-2011 | 10:47:09 | 44 | 1 | -13.69 | 644.6 |
| 1 | GM | 06-09-2011 | 11:54:58 | 44 | 1 | -12.69 | 653 |
| 1 | GM | 06-09-2011 | 11:58:22 | 44 | 1 | -11.69 | 720.2 |
| 1 | GM | 06-09-2011 | 12:01:39 | 44 | 1 | -10.69 | 536.7 |
| 1 | GM | 06-09-2011 | 12:04:54 | 44 | 1 | -9.69 | 92.06 |
| 1 | GM | 06-09-2011 | 12:08:06 | 44 | 1 | -8.69 | 12.04 |
| 1 | GM | 06-09-2011 | 12:11:18 | 44 | 1 | -7.69 | 1.1 |
| 1 | GM | 06-09-2011 | 12:14:30 | 44 | 1 | -6.69 | 0.01 |
| 1 | GM | 06-09-2011 | 12:17:43 | 44 | 1 | -5.69 | 0.08 |
| 1 | GM | 06-09-2011 | 12:20:55 | 44 | 1 | -4.69 | 0 |
| 1 | GM | 06-09-2011 | 12:24:38 | 44 | 1 | -3.69 | 0.13 |
| 1 | GM | 06-09-2011 | 12:27:50 | 44 | 1 | -2.69 | 0 |
| 1 | GM | 06-09-2011 | 12:31:02 | 44 | 1 | -1.69 | 0 |

# Appendix Table B 45 - VPU 45

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-08-2011 | 14:07:25 | 45 | 2 | -22.69 | 0.04 |
| 1 | GM | 06-08-2011 | 14:10:38 | 45 | 2 | -21.69 | 0.09 |
| 1 | GM | 06-08-2011 | 14:13:49 | 45 | 2 | -20.69 | 0.01 |
| 1 | GM | 06-08-2011 | 14:17:00 | 45 | 2 | -19.69 | 1.81 |
| 1 | GM | 06-08-2011 | 14:20:13 | 45 | 2 | -18.69 | 64.88 |
| 1 | GM | 06-08-2011 | 14:23:26 | 45 | 2 | -17.69 | 609.8 |
| 1 | GM | 06-08-2011 | 14:26:40 | 45 | 2 | -16.69 | 782.5 |
| 1 | GM | 06-08-2011 | 14:29:57 | 45 | 2 | -15.69 | 1781 |
| 1 | GM | 06-08-2011 | 14:33:11 | 45 | 2 | -14.69 | 534.3 |
| 1 | GM | 06-08-2011 | 14:36:23 | 45 | 2 | -13.69 | 115.2 |
| 1 | GM | 06-08-2011 | 14:39:35 | 45 | 2 | -12.69 | 53.09 |
| 1 | GM | 06-08-2011 | 14:42:46 | 45 | 2 | -11.69 | 16.12 |
| 1 | GM | 06-08-2011 | 14:45:56 | 45 | 2 | -10.69 | 1.85 |
| 1 | GM | 06-08-2011 | 14:49:08 | 45 | 2 | -9.69 | 3.46 |
| 1 | GM | 06-08-2011 | 14:52:20 | 45 | 2 | -8.69 | 2.04 |
| 1 | GM | 06-08-2011 | 14:55:31 | 45 | 2 | -7.69 | 0.33 |
| 1 | GM | 06-08-2011 | 14:58:41 | 45 | 2 | -6.69 | 0 |
| 1 | GM | 06-08-2011 | 15:01:52 | 45 | 2 | -5.69 | 0 |
| 1 | GM | 06-08-2011 | 15:05:02 | 45 | 2 | -4.69 | 0 |
| 1 | GM | 06-08-2011 | 15:08:12 | 45 | 2 | -3.69 | 0 |
| 1 | GM | 06-08-2011 | 15:11:22 | 45 | 2 | -2.69 | 0.02 |
| 1 | GM | 06-08-2011 | 15:14:34 | 45 | 2 | -1.69 | 0.09 |
| 1 | GM | 06-08-2011 | 15:19:50 | 45 | 1 | -22.69 | 0 |
| 1 | GM | 06-08-2011 | 15:23:02 | 45 | 1 | -21.69 | 0 |
| 1 | GM | 06-08-2011 | 15:26:13 | 45 | 1 | -20.69 | 0 |
| 1 | GM | 06-08-2011 | 15:29:24 | 45 | 1 | -19.69 | 0.38 |
| 1 | GM | 06-08-2011 | 15:32:37 | 45 | 1 | -18.69 | 10.01 |
| 1 | GM | 06-08-2011 | 15:33:05 | 45 | 1 | -18.69 | 68.51 |
| 1 | GM | 06-09-2011 | 08:09:12 | 45 | 1 | -17.69 | 71.68 |
| 1 | GM | 06-09-2011 | 08:12:26 | 45 | 1 | -16.69 | 88.28 |
| 1 | GM | 06-09-2011 | 08:15:38 | 45 | 1 | -15.69 | 94.95 |
| 1 | GM | 06-09-2011 | 08:18:50 | 45 | 1 | -14.69 | 53.13 |
| 1 | GM | 06-09-2011 | 08:22:01 | 45 | 1 | -13.69 | 8.06 |
| 1 | GM | 06-09-2011 | 08:25:14 | 45 | 1 | -12.69 | 0.83 |
| 1 | GM | 06-09-2011 | 08:28:25 | 45 | 1 | -11.69 | 0.23 |
| 1 | GM | 06-09-2011 | 08:31:38 | 45 | 1 | -10.69 | 0.03 |
| 1 | GM | 06-09-2011 | 08:34:49 | 45 | 1 | -9.69 | 0.55 |
| 1 | GM | 06-09-2011 | 08:38:01 | 45 | 1 | -8.69 | 0.73 |
| 1 | GM | 06-09-2011 | 08:41:14 | 45 | 1 | -7.69 | 0.2 |
| 1 | GM | 06-09-2011 | 08:44:27 | 45 | 1 | -6.69 | 0.02 |
| 1 | GM | 06-09-2011 | 08:47:43 | 45 | 1 | -5.69 | 0.03 |
| 1 | GM | 06-09-2011 | 08:51:01 | 45 | 1 | -4.69 | 0 |
| 1 | GM | 06-09-2011 | 08:54:13 | 45 | 1 | -3.69 | 0 |
| 1 | GM | 06-09-2011 | 08:57:24 | 45 | 1 | -2.69 | 0 |
| 1 | GM | 06-09-2011 | 09:01:56 | 45 | 1 | -1.69 | 0 |

# Appendix Table B 46 - VPU 46

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-08-2011 | 10:22:51 | 46 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-08-2011 | 10:26:04 | 46 | 2 | -21.69 | 0.03 |
| 1 | GM | 06-08-2011 | 10:29:15 | 46 | 2 | -20.69 | 0 |
| 1 | GM | 06-08-2011 | 10:32:25 | 46 | 2 | -19.69 | 0.1 |
| 1 | GM | 06-08-2011 | 10:35:35 | 46 | 2 | -18.69 | 0.11 |
| 1 | GM | 06-08-2011 | 10:38:48 | 46 | 2 | -17.69 | 0.4 |
| 1 | GM | 06-08-2011 | 10:42:00 | 46 | 2 | -16.69 | 1.99 |
| 1 | GM | 06-08-2011 | 10:45:13 | 46 | 2 | -15.69 | 6.41 |
| 1 | GM | 06-08-2011 | 12:01:40 | 46 | 2 | -14.69 | 23.51 |
| 1 | GM | 06-08-2011 | 12:04:52 | 46 | 2 | -13.69 | 79.09 |
| 1 | GM | 06-08-2011 | 12:08:07 | 46 | 2 | -12.69 | 179.5 |
| 1 | GM | 06-08-2011 | 12:11:17 | 46 | 2 | -11.69 | 3050 |
| 1 | GM | 06-08-2011 | 12:14:39 | 46 | 2 | -10.69 | 3489 |
| 1 | GM | 06-08-2011 | 12:17:52 | 46 | 2 | -9.69 | 106 |
| 1 | GM | 06-08-2011 | 12:21:09 | 46 | 2 | -8.69 | 24.94 |
| 1 | GM | 06-08-2011 | 12:24:26 | 46 | 2 | -7.69 | 18.6 |
| 1 | GM | 06-08-2011 | 12:27:38 | 46 | 2 | -6.69 | 1.64 |
| 1 | GM | 06-08-2011 | 12:30:51 | 46 | 2 | -5.69 | 0.24 |
| 1 | GM | 06-08-2011 | 12:34:04 | 46 | 2 | -4.69 | 0.02 |
| 1 | GM | 06-08-2011 | 12:37:15 | 46 | 2 | -3.69 | 0 |
| 1 | GM | 06-08-2011 | 12:40:29 | 46 | 2 | -2.69 | 0.12 |
| 1 | GM | 06-08-2011 | 12:43:45 | 46 | 2 | -1.69 | 0 |
| 1 | GM | 06-08-2011 | 12:48:01 | 46 | 1 | -22.69 | 0 |
| 1 | GM | 06-08-2011 | 12:51:13 | 46 | 1 | -21.69 | 0.01 |
| 1 | GM | 06-08-2011 | 12:54:32 | 46 | 1 | -20.69 | 0.1 |
| 1 | GM | 06-08-2011 | 12:57:44 | 46 | 1 | -19.69 | 0 |
| 1 | GM | 06-08-2011 | 13:00:55 | 46 | 1 | -18.69 | 0 |
| 1 | GM | 06-08-2011 | 13:04:09 | 46 | 1 | -17.69 | 0.08 |
| 1 | GM | 06-08-2011 | 13:07:21 | 46 | 1 | -16.69 | 0.02 |
| 1 | GM | 06-08-2011 | 13:10:56 | 46 | 1 | -15.69 | 0.29 |
| 1 | GM | 06-08-2011 | 13:14:22 | 46 | 1 | -14.69 | 3.09 |
| 1 | GM | 06-08-2011 | 13:17:35 | 46 | 1 | -13.69 | 16.57 |
| 1 | GM | 06-08-2011 | 13:20:47 | 46 | 1 | -12.69 | 17.6 |
| 1 | GM | 06-08-2011 | 13:23:57 | 46 | 1 | -11.69 | 4.17 |
| 1 | GM | 06-08-2011 | 13:27:11 | 46 | 1 | -10.69 | 3.25 |
| 1 | GM | 06-08-2011 | 13:36:08 | 46 | 1 | -9.69 | 1.31 |
| 1 | GM | 06-08-2011 | 13:39:20 | 46 | 1 | -8.69 | 2.11 |
| 1 | GM | 06-08-2011 | 13:42:30 | 46 | 1 | -7.69 | 0.85 |
| 1 | GM | 06-08-2011 | 13:45:42 | 46 | 1 | -6.69 | 0.2 |
| 1 | GM | 06-08-2011 | 13:48:51 | 46 | 1 | -5.69 | 0.01 |
| 1 | GM | 06-08-2011 | 13:52:04 | 46 | 1 | -4.69 | 0.07 |
| 1 | GM | 06-08-2011 | 13:55:29 | 46 | 1 | -3.69 | 0.01 |
| 1 | GM | 06-08-2011 | 13:58:40 | 46 | 1 | -2.69 | 0.05 |
| 1 | GM | 06-08-2011 | 14:02:57 | 46 | 1 | -1.69 | 0 |

# Appendix Table B 47 - VPU 47

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-08-2011 | 07:57:06 | 47 | 2 | -22.69 | 0.02 |
| 1 | GM | 06-08-2011 | 08:00:21 | 47 | 2 | -21.69 | 0 |
| 1 | GM | 06-08-2011 | 08:03:36 | 47 | 2 | -20.69 | 0.19 |
| 1 | GM | 06-08-2011 | 08:06:47 | 47 | 2 | -19.69 | 0.47 |
| 1 | GM | 06-08-2011 | 08:10:03 | 47 | 2 | -18.69 | 21.04 |
| 1 | GM | 06-08-2011 | 08:13:15 | 47 | 2 | -17.69 | 1293 |
| 1 | GM | 06-08-2011 | 08:16:27 | 47 | 2 | -16.69 | 3649 |
| 1 | GM | 06-08-2011 | 08:19:40 | 47 | 2 | -15.69 | 365.4 |
| 1 | GM | 06-08-2011 | 08:22:50 | 47 | 2 | -14.69 | 13.44 |
| 1 | GM | 06-08-2011 | 08:26:00 | 47 | 2 | -13.69 | 0.26 |
| 1 | GM | 06-08-2011 | 08:29:17 | 47 | 2 | -12.69 | 0.01 |
| 1 | GM | 06-08-2011 | 08:32:26 | 47 | 2 | -11.69 | 0.79 |
| 1 | GM | 06-08-2011 | 08:35:40 | 47 | 2 | -10.69 | 12.56 |
| 1 | GM | 06-08-2011 | 08:38:52 | 47 | 2 | -9.69 | 14.56 |
| 1 | GM | 06-08-2011 | 08:42:34 | 47 | 2 | -8.69 | 45.62 |
| 1 | GM | 06-08-2011 | 08:45:52 | 47 | 2 | -7.69 | 36.14 |
| 1 | GM | 06-08-2011 | 08:49:07 | 47 | 2 | -6.69 | 1.58 |
| 1 | GM | 06-08-2011 | 08:52:22 | 47 | 2 | -5.69 | 0.05 |
| 1 | GM | 06-08-2011 | 08:55:31 | 47 | 2 | -4.69 | 0 |
| 1 | GM | 06-08-2011 | 08:58:43 | 47 | 2 | -3.69 | 0.15 |
| 1 | GM | 06-08-2011 | 09:01:59 | 47 | 2 | -2.69 | 0 |
| 1 | GM | 06-08-2011 | 09:05:14 | 47 | 2 | -1.69 | 0 |
| 1 | GM | 06-08-2011 | 09:09:34 | 47 | 1 | -22.69 | 0 |
| 1 | GM | 06-08-2011 | 09:12:47 | 47 | 1 | -21.69 | 0 |
| 1 | GM | 06-08-2011 | 09:16:09 | 47 | 1 | -20.69 | 0.2 |
| 1 | GM | 06-08-2011 | 09:19:20 | 47 | 1 | -19.69 | 0.28 |
| 1 | GM | 06-08-2011 | 09:22:37 | 47 | 1 | -18.69 | 4.49 |
| 1 | GM | 06-08-2011 | 09:25:49 | 47 | 1 | -17.69 | 105.8 |
| 1 | GM | 06-08-2011 | 09:29:03 | 47 | 1 | -16.69 | 299.6 |
| 1 | GM | 06-08-2011 | 09:32:17 | 47 | 1 | -15.69 | 75.4 |
| 1 | GM | 06-08-2011 | 09:35:30 | 47 | 1 | -14.69 | 2.97 |
| 1 | GM | 06-08-2011 | 09:38:44 | 47 | 1 | -13.69 | 0.02 |
| 1 | GM | 06-08-2011 | 09:41:57 | 47 | 1 | -12.69 | 0.12 |
| 1 | GM | 06-08-2011 | 09:45:09 | 47 | 1 | -11.69 | 2.59 |
| 1 | GM | 06-08-2011 | 09:48:23 | 47 | 1 | -10.69 | 15.57 |
| 1 | GM | 06-08-2011 | 09:51:36 | 47 | 1 | -9.69 | 9.04 |
| 1 | GM | 06-08-2011 | 09:54:49 | 47 | 1 | -8.69 | 3.27 |
| 1 | GM | 06-08-2011 | 09:58:04 | 47 | 1 | -7.69 | 1.87 |
| 1 | GM | 06-08-2011 | 10:01:17 | 47 | 1 | -6.69 | 0.12 |
| 1 | GM | 06-08-2011 | 10:04:29 | 47 | 1 | -5.69 | 0.04 |
| 1 | GM | 06-08-2011 | 10:07:41 | 47 | 1 | -4.69 | 0 |
| 1 | GM | 06-08-2011 | 10:10:52 | 47 | 1 | -3.69 | 0.06 |
| 1 | GM | 06-08-2011 | 10:14:19 | 47 | 1 | -2.69 | 0 |
| 1 | GM | 06-08-2011 | 10:19:32 | 47 | 1 | -1.69 | 0.02 |

# Appendix Table B 48 - VPU 48

| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-07-2011 | 13:35:43 | 48 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-07-2011 | 13:39:10 | 48 | 2 | -21.69 | 0.03 |
| 1 | GM | 06-07-2011 | 13:42:24 | 48 | 2 | -20.69 | 0.25 |
| 1 | GM | 06-07-2011 | 13:45:39 | 48 | 2 | -19.69 | 0.3 |
| 1 | GM | 06-07-2011 | 13:48:49 | 48 | 2 | -18.69 | 6.76 |
| 1 | GM | 06-07-2011 | 13:52:01 | 48 | 2 | -17.69 | 107.6 |
| 1 | GM | 06-07-2011 | 13:55:17 | 48 | 2 | -16.69 | 197.7 |
| 1 | GM | 06-07-2011 | 13:58:28 | 48 | 2 | -15.69 | 65.26 |
| 1 | GM | 06-07-2011 | 14:01:44 | 48 | 2 | -14.69 | 14 |
| 1 | GM | 06-07-2011 | 14:04:55 | 48 | 2 | -13.69 | 26.11 |
| 1 | GM | 06-07-2011 | 14:08:06 | 48 | 2 | -12.69 | 66.02 |
| 1 | GM | 06-07-2011 | 14:11:23 | 48 | 2 | -11.69 | 82.14 |
| 1 | GM | 06-07-2011 | 14:14:36 | 48 | 2 | -10.69 | 56.67 |
| 1 | GM | 06-07-2011 | 14:17:46 | 48 | 2 | -9.69 | 61.79 |
| 1 | GM | 06-07-2011 | 14:20:56 | 48 | 2 | -8.69 | 82.86 |
| 1 | GM | 06-07-2011 | 14:24:08 | 48 | 2 | -7.69 | 490.5 |
| 1 | GM | 06-07-2011 | 14:27:23 | 48 | 2 | -6.69 | 193 |
| 1 | GM | 06-07-2011 | 14:30:35 | 48 | 2 | -5.69 | 3.68 |
| 1 | GM | 06-07-2011 | 14:33:46 | 48 | 2 | -4.69 | 0.11 |
| 1 | GM | 06-07-2011 | 14:37:02 | 48 | 2 | -3.69 | 0.04 |
| 1 | GM | 06-07-2011 | 14:40:15 | 48 | 2 | -2.69 | 0.03 |
| 1 | GM | 06-07-2011 | 14:43:28 | 48 | 2 | -1.69 | 0.03 |
| 1 | GM | 06-07-2011 | 14:47:30 | 48 | 1 | -22.69 | 0 |
| 1 | GM | 06-07-2011 | 14:51:05 | 48 | 1 | -21.69 | 0 |
| 1 | GM | 06-07-2011 | 14:54:19 | 48 | 1 | -20.69 | 0.13 |
| 1 | GM | 06-07-2011 | 14:57:37 | 48 | 1 | -19.69 | 0.35 |
| 1 | GM | 06-07-2011 | 15:00:50 | 48 | 1 | -18.69 | 3.87 |
| 1 | GM | 06-07-2011 | 15:04:06 | 48 | 1 | -17.69 | 14.63 |
| 1 | GM | 06-07-2011 | 15:07:18 | 48 | 1 | -16.69 | 24.94 |
| 1 | GM | 06-07-2011 | 15:10:31 | 48 | 1 | -15.69 | 7.08 |
| 1 | GM | 06-07-2011 | 15:14:04 | 48 | 1 | -14.69 | 1.46 |
| 1 | GM | 06-07-2011 | 15:17:21 | 48 | 1 | -13.69 | 1.93 |
| 1 | GM | 06-07-2011 | 15:20:57 | 48 | 1 | -12.69 | 2.09 |
| 1 | GM | 06-07-2011 | 15:24:10 | 48 | 1 | -11.69 | 2.74 |
| 1 | GM | 06-07-2011 | 15:27:23 | 48 | 1 | -10.69 | 2.35 |
| 1 | GM | 06-07-2011 | 15:30:34 | 48 | 1 | -9.69 | 1.04 |
| 1 | GM | 06-07-2011 | 15:33:45 | 48 | 1 | -8.69 | 0.1 |
| 1 | GM | 06-08-2011 | 07:33:14 | 48 | 1 | -7.69 | 0.28 |
| 1 | GM | 06-08-2011 | 07:36:29 | 48 | 1 | -6.69 | 0.2 |
| 1 | GM | 06-08-2011 | 07:39:43 | 48 | 1 | -5.69 | 0.01 |
| 1 | GM | 06-08-2011 | 07:42:55 | 48 | 1 | -4.69 | 0 |
| 1 | GM | 06-08-2011 | 07:46:09 | 48 | 1 | -3.69 | 0.01 |
| 1 | GM | 06-08-2011 | 07:49:20 | 48 | 1 | -2.69 | 0.01 |
| 1 | GM | 06-08-2011 | 07:52:31 | 48 | 1 | -1.69 | 0.09 |

# Appendix Table B 49 - VPU 49

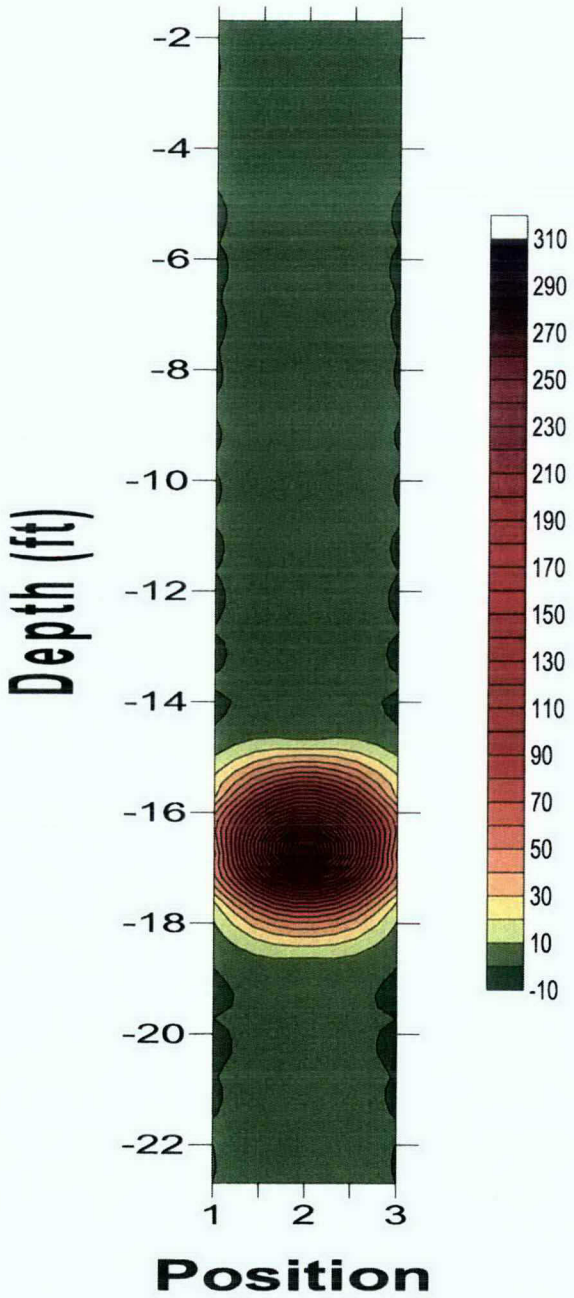
| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-07-2011 | 10:01:51 | 49 | 2 | -22.69 | 0.02 |
| 1 | GM | 06-07-2011 | 10:05:02 | 49 | 2 | -21.69 | 0.01 |
| 1 | GM | 06-07-2011 | 10:08:20 | 49 | 2 | -20.69 | 0 |
| 1 | GM | 06-07-2011 | 10:11:32 | 49 | 2 | -19.69 | 0.18 |
| 1 | GM | 06-07-2011 | 10:14:46 | 49 | 2 | -18.69 | 2.62 |
| 1 | GM | 06-07-2011 | 10:20:14 | 49 | 2 | -17.69 | 101.3 |
| 1 | GM | 06-07-2011 | 10:23:24 | 49 | 2 | -16.69 | 237.1 |
| 1 | GM | 06-07-2011 | 10:26:38 | 49 | 2 | -15.69 | 57.29 |
| 1 | GM | 06-07-2011 | 10:29:48 | 49 | 2 | -14.69 | 16.11 |
| 1 | GM | 06-07-2011 | 10:33:00 | 49 | 2 | -13.69 | 8.63 |
| 1 | GM | 06-07-2011 | 10:36:12 | 49 | 2 | -12.69 | 21.99 |
| 1 | GM | 06-07-2011 | 10:39:23 | 49 | 2 | -11.69 | 8.84 |
| 1 | GM | 06-07-2011 | 10:42:35 | 49 | 2 | -10.69 | 1.67 |
| 1 | GM | 06-07-2011 | 10:45:47 | 49 | 2 | -9.69 | 5.81 |
| 1 | GM | 06-07-2011 | 10:48:58 | 49 | 2 | -8.69 | 6.37 |
| 1 | GM | 06-07-2011 | 11:55:05 | 49 | 2 | -7.69 | 1.99 |
| 1 | GM | 06-07-2011 | 11:58:51 | 49 | 2 | -6.69 | 1.1 |
| 1 | GM | 06-07-2011 | 12:02:02 | 49 | 2 | -5.69 | 0.33 |
| 1 | GM | 06-07-2011 | 12:05:15 | 49 | 2 | -4.69 | 0.07 |
| 1 | GM | 06-07-2011 | 12:08:27 | 49 | 2 | -3.69 | 0 |
| 1 | GM | 06-07-2011 | 12:11:38 | 49 | 2 | -2.69 | 0.01 |
| 1 | GM | 06-07-2011 | 12:14:49 | 49 | 2 | -1.69 | 0.01 |
| 1 | GM | 06-07-2011 | 12:22:35 | 49 | 1 | -22.69 | 0 |
| 1 | GM | 06-07-2011 | 12:25:56 | 49 | 1 | -21.69 | 0 |
| 1 | GM | 06-07-2011 | 12:29:18 | 49 | 1 | -20.69 | 0 |
| 1 | GM | 06-07-2011 | 12:32:31 | 49 | 1 | -19.69 | 0.14 |
| 1 | GM | 06-07-2011 | 12:35:41 | 49 | 1 | -18.69 | 0.32 |
| 1 | GM | 06-07-2011 | 12:38:54 | 49 | 1 | -17.69 | 5.62 |
| 1 | GM | 06-07-2011 | 12:42:07 | 49 | 1 | -16.69 | 28.63 |
| 1 | GM | 06-07-2011 | 12:45:21 | 49 | 1 | -15.69 | 18.96 |
| 1 | GM | 06-07-2011 | 12:48:35 | 49 | 1 | -14.69 | 13.18 |
| 1 | GM | 06-07-2011 | 12:51:47 | 49 | 1 | -13.69 | 3.71 |
| 1 | GM | 06-07-2011 | 12:55:03 | 49 | 1 | -12.69 | 6 |
| 1 | GM | 06-07-2011 | 12:58:16 | 49 | 1 | -11.69 | 4.91 |
| 1 | GM | 06-07-2011 | 13:01:31 | 49 | 1 | -10.69 | 1.76 |
| 1 | GM | 06-07-2011 | 13:04:45 | 49 | 1 | -9.69 | 4.47 |
| 1 | GM | 06-07-2011 | 13:07:57 | 49 | 1 | -8.69 | 1.4 |
| 1 | GM | 06-07-2011 | 13:11:24 | 49 | 1 | -7.69 | 6.37 |
| 1 | GM | 06-07-2011 | 13:14:34 | 49 | 1 | -6.69 | 17.16 |
| 1 | GM | 06-07-2011 | 13:17:46 | 49 | 1 | -5.69 | 2.52 |
| 1 | GM | 06-07-2011 | 13:20:57 | 49 | 1 | -4.69 | 0.23 |
| 1 | GM | 06-07-2011 | 13:24:19 | 49 | 1 | -3.69 | 0.01 |
| 1 | GM | 06-07-2011 | 13:27:36 | 49 | 1 | -2.69 | 0 |
| 1 | GM | 06-07-2011 | 13:32:16 | 49 | 1 | -1.69 | 0 |

# Appendix Table B 50 - VPU 50

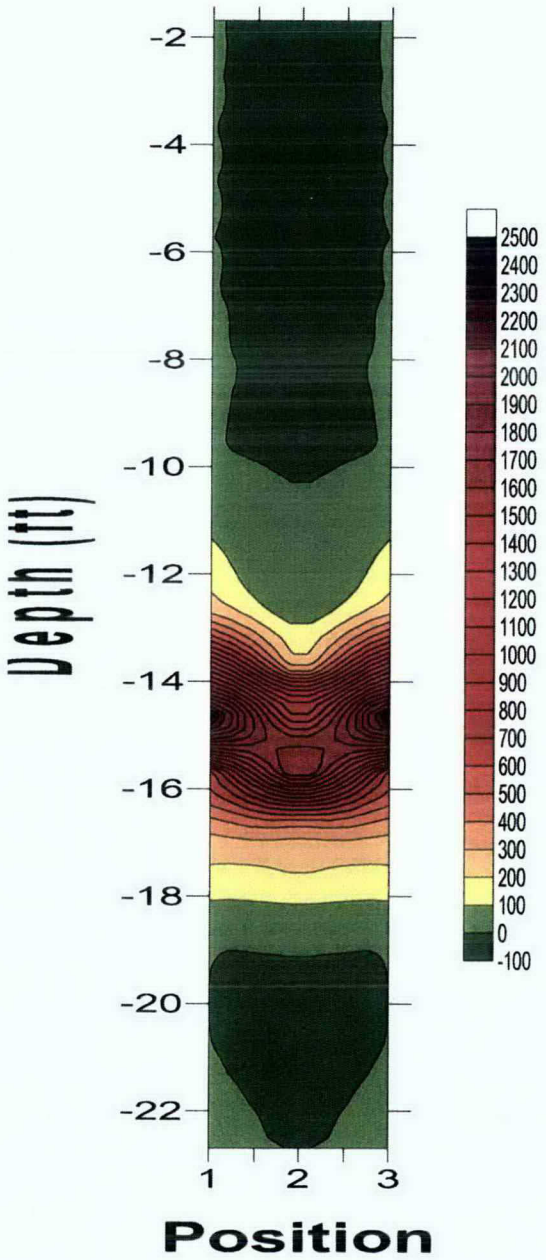
| MDP | Detector | Date | Time | Vertical Pipe Unit | Cone Penetrometer | Depth (ft) | Exposure (mR/hr) |
|---|---|---|---|---|---|---|---|
| 1 | GM | 06-07-2011 | 07:37:25 | 50 | 2 | -22.69 | 0.01 |
| 1 | GM | 06-07-2011 | 07:40:39 | 50 | 2 | -21.69 | 0.18 |
| 1 | GM | 06-07-2011 | 07:43:49 | 50 | 2 | -20.69 | 0 |
| 1 | GM | 06-07-2011 | 07:47:08 | 50 | 2 | -19.69 | 0 |
| 1 | GM | 06-07-2011 | 07:50:17 | 50 | 2 | -18.69 | 0.02 |
| 1 | GM | 06-07-2011 | 07:53:34 | 50 | 2 | -17.69 | 2.29 |
| 1 | GM | 06-07-2011 | 07:56:51 | 50 | 2 | -16.69 | 19.9 |
| 1 | GM | 06-07-2011 | 08:00:02 | 50 | 2 | -15.69 | 68.89 |
| 1 | GM | 06-07-2011 | 08:03:15 | 50 | 2 | -14.69 | 103.1 |
| 1 | GM | 06-07-2011 | 08:06:26 | 50 | 2 | -13.69 | 38.17 |
| 1 | GM | 06-07-2011 | 08:09:43 | 50 | 2 | -12.69 | 24.93 |
| 1 | GM | 06-07-2011 | 08:12:53 | 50 | 2 | -11.69 | 25.11 |
| 1 | GM | 06-07-2011 | 08:16:07 | 50 | 2 | -10.69 | 64.97 |
| 1 | GM | 06-07-2011 | 08:19:19 | 50 | 2 | -9.69 | 34.39 |
| 1 | GM | 06-07-2011 | 08:22:33 | 50 | 2 | -8.69 | 103.9 |
| 1 | GM | 06-07-2011 | 08:25:46 | 50 | 2 | -7.69 | 31.5 |
| 1 | GM | 06-07-2011 | 08:28:59 | 50 | 2 | -6.69 | 1.35 |
| 1 | GM | 06-07-2011 | 08:32:11 | 50 | 2 | -5.69 | 0.12 |
| 1 | GM | 06-07-2011 | 08:35:21 | 50 | 2 | -4.69 | 0 |
| 1 | GM | 06-07-2011 | 08:38:36 | 50 | 2 | -3.69 | 0 |
| 1 | GM | 06-07-2011 | 08:41:56 | 50 | 2 | -2.69 | 0 |
| 1 | GM | 06-07-2011 | 08:45:15 | 50 | 2 | -1.69 | 0.05 |
| 1 | GM | 06-07-2011 | 08:49:12 | 50 | 1 | -22.69 | 0 |
| 1 | GM | 06-07-2011 | 08:52:27 | 50 | 1 | -21.69 | 0.03 |
| 1 | GM | 06-07-2011 | 08:55:43 | 50 | 1 | -20.69 | 0 |
| 1 | GM | 06-07-2011 | 08:58:55 | 50 | 1 | -19.69 | 0 |
| 1 | GM | 06-07-2011 | 09:02:10 | 50 | 1 | -18.69 | 0.1 |
| 1 | GM | 06-07-2011 | 09:05:32 | 50 | 1 | -17.69 | 0.38 |
| 1 | GM | 06-07-2011 | 09:08:52 | 50 | 1 | -16.69 | 0.48 |
| 1 | GM | 06-07-2011 | 09:12:15 | 50 | 1 | -15.69 | 0.81 |
| 1 | GM | 06-07-2011 | 09:15:28 | 50 | 1 | -14.69 | 2.78 |
| 1 | GM | 06-07-2011 | 09:18:39 | 50 | 1 | -13.69 | 5.63 |
| 1 | GM | 06-07-2011 | 09:21:51 | 50 | 1 | -12.69 | 1.52 |
| 1 | GM | 06-07-2011 | 09:25:01 | 50 | 1 | -11.69 | 0.25 |
| 1 | GM | 06-07-2011 | 09:28:18 | 50 | 1 | -10.69 | 0.15 |
| 1 | GM | 06-07-2011 | 09:31:30 | 50 | 1 | -9.69 | 0.3 |
| 1 | GM | 06-07-2011 | 09:34:42 | 50 | 1 | -8.69 | 1.61 |
| 1 | GM | 06-07-2011 | 09:37:55 | 50 | 1 | -7.69 | 1.01 |
| 1 | GM | 06-07-2011 | 09:41:06 | 50 | 1 | -6.69 | 0.15 |
| 1 | GM | 06-07-2011 | 09:44:18 | 50 | 1 | -5.69 | 0 |
| 1 | GM | 06-07-2011 | 09:47:29 | 50 | 1 | -4.69 | 0 |
| 1 | GM | 06-07-2011 | 09:50:42 | 50 | 1 | -3.69 | 0.02 |
| 1 | GM | 06-07-2011 | 09:53:54 | 50 | 1 | -2.69 | 0.07 |
| 1 | GM | 06-07-2011 | 09:57:11 | 50 | 1 | -1.69 | 0.04 |

# Appendix C
# MGP AMP-100 Activity Distribution Plots

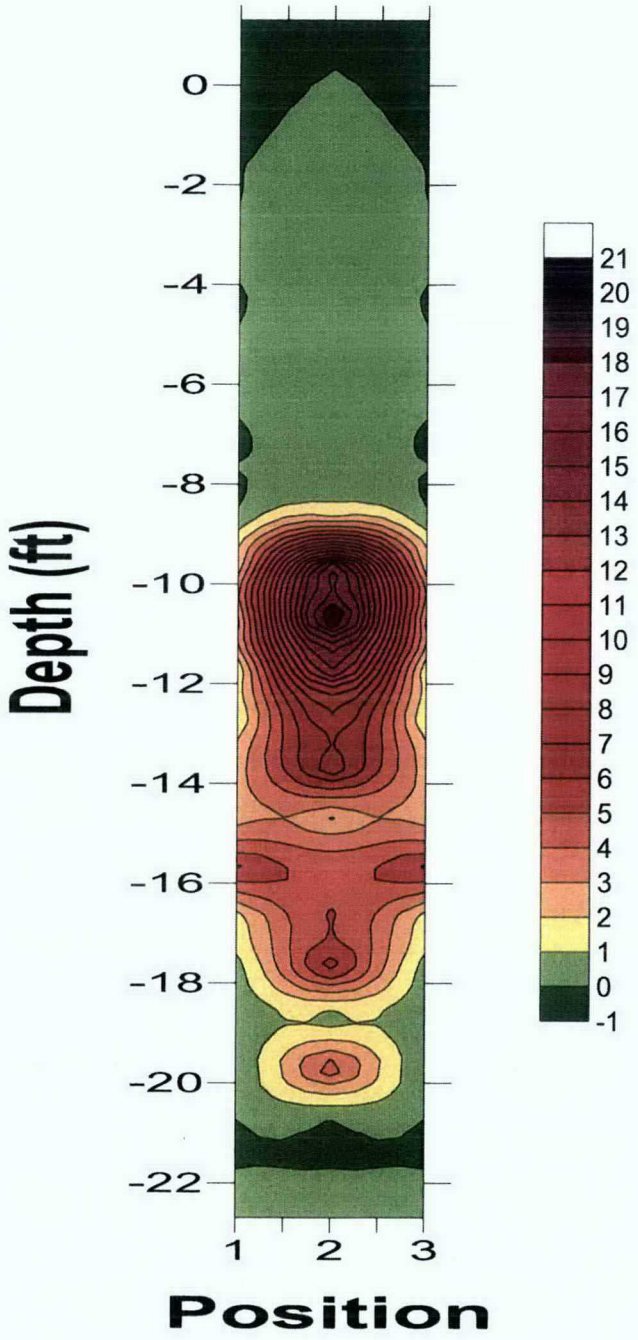
## MDP -2 VPU 1
## Gross Rate (mR/hr)



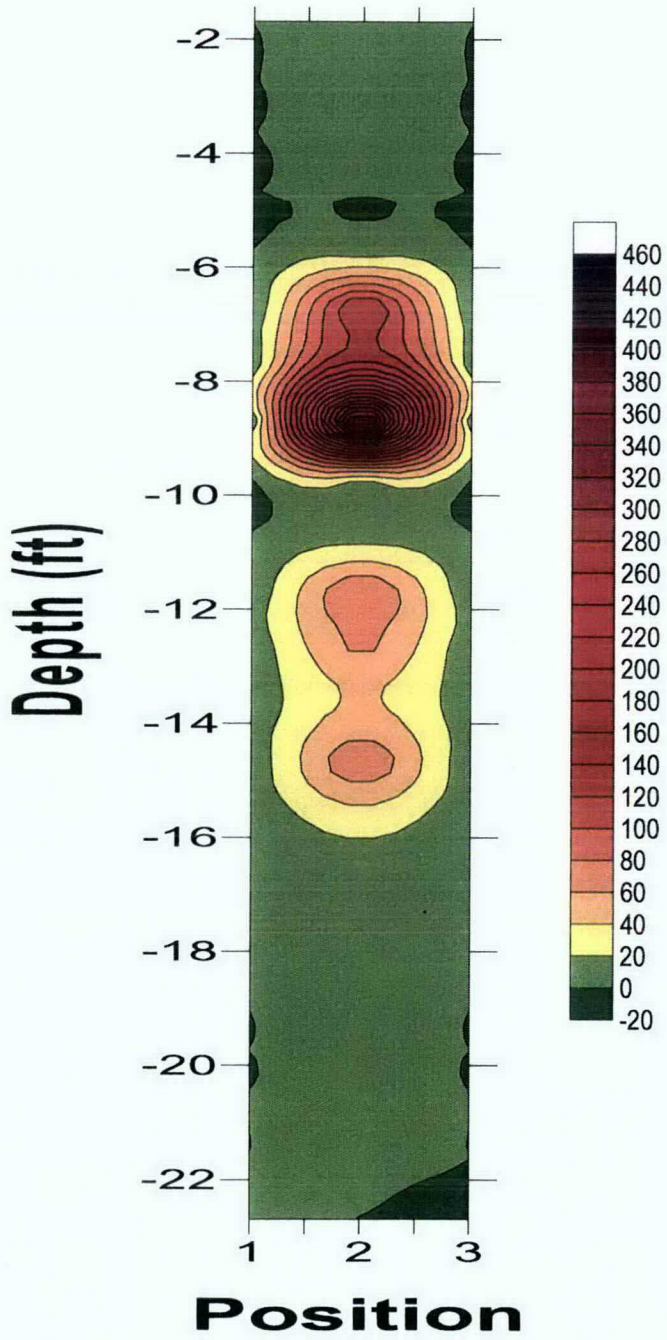
# MDP 2 VPU 2
## Gross Rate (mR/hr)



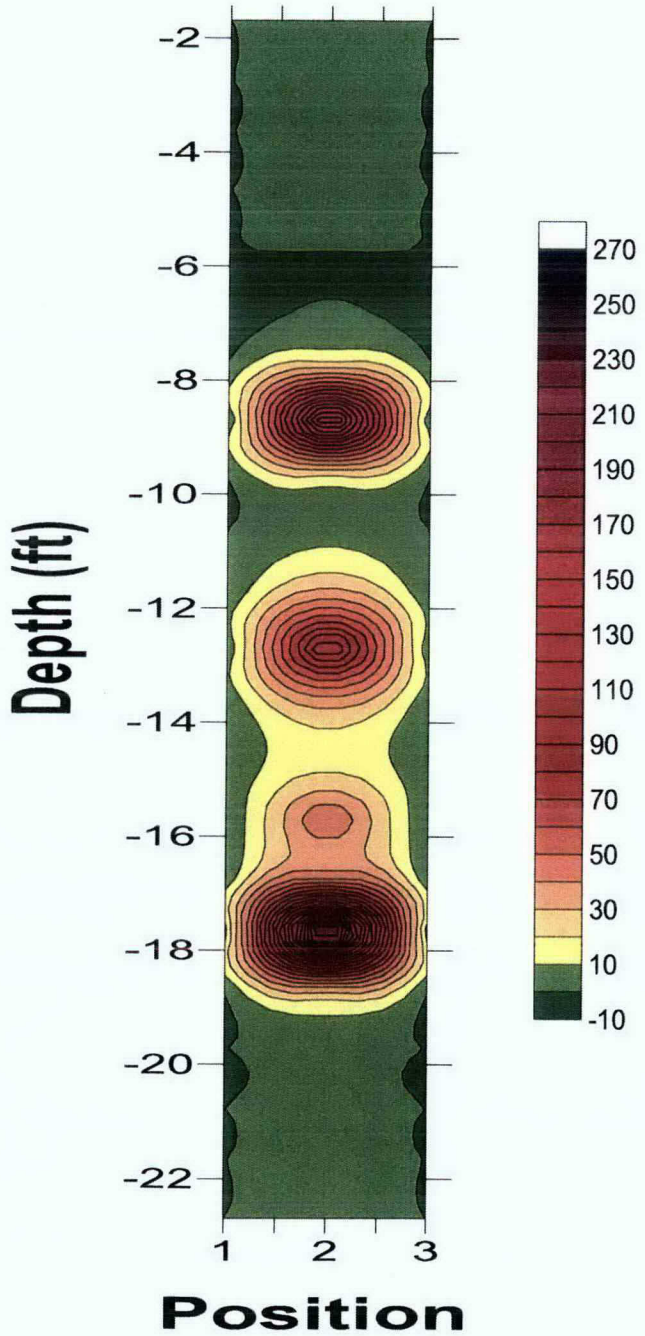
# MDP 2 VPU 3
## Gross Rate (mR/hr)



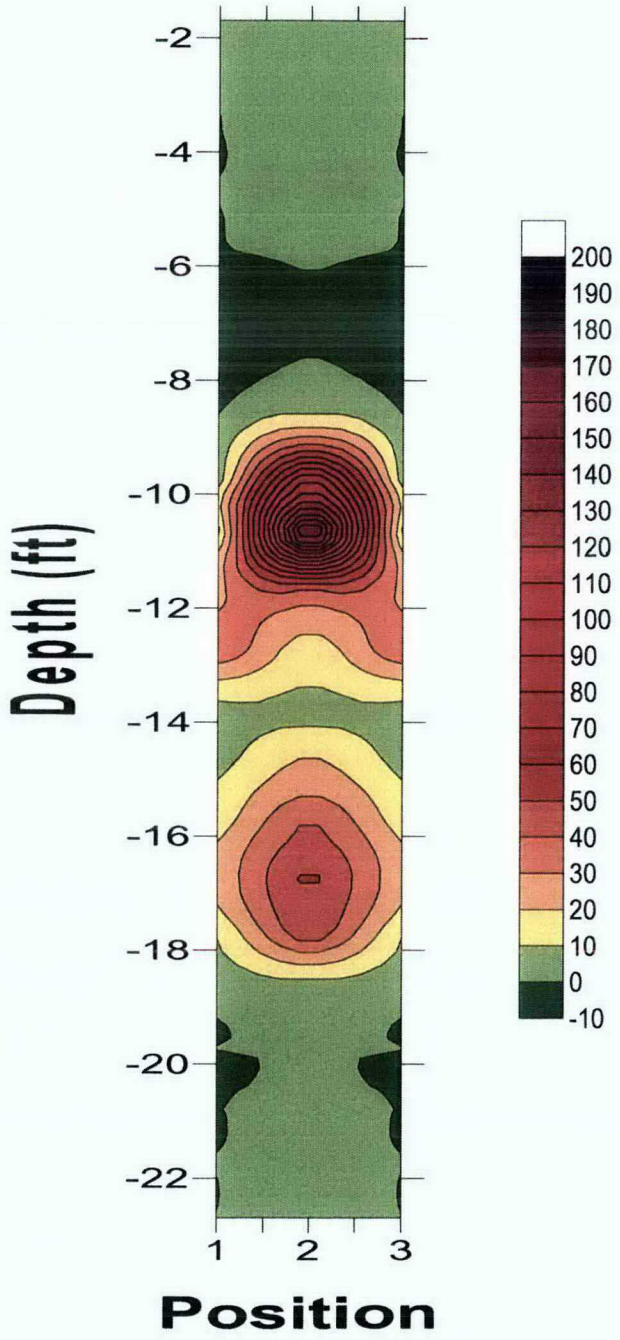
# MDP 2 VPU 4
## Gross Rate (mR/hr)



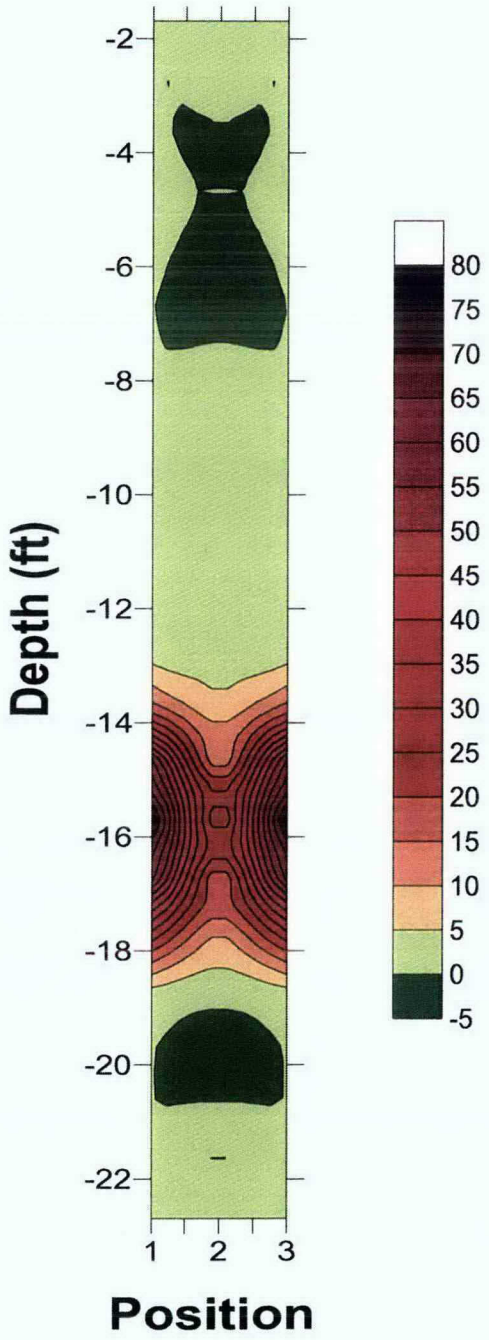
# MDP 2 VPU 5
## Gross Rate (mR/hr)



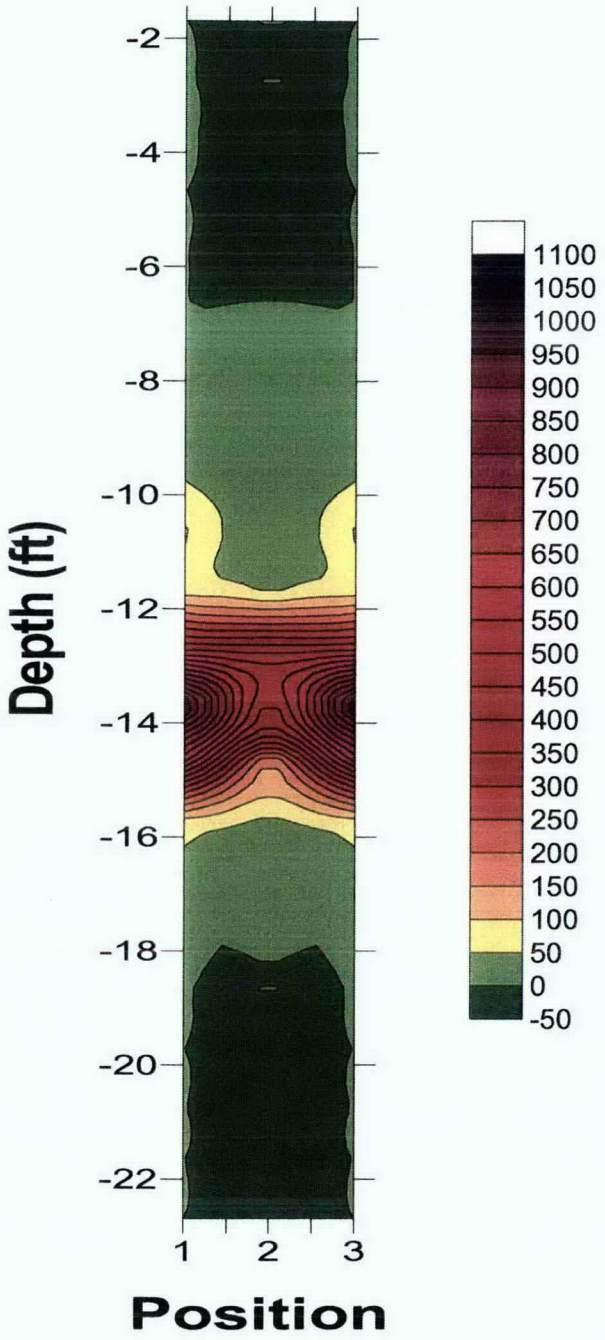
# MDP 2 VPU 6
## Gross Rate (mR/hr)



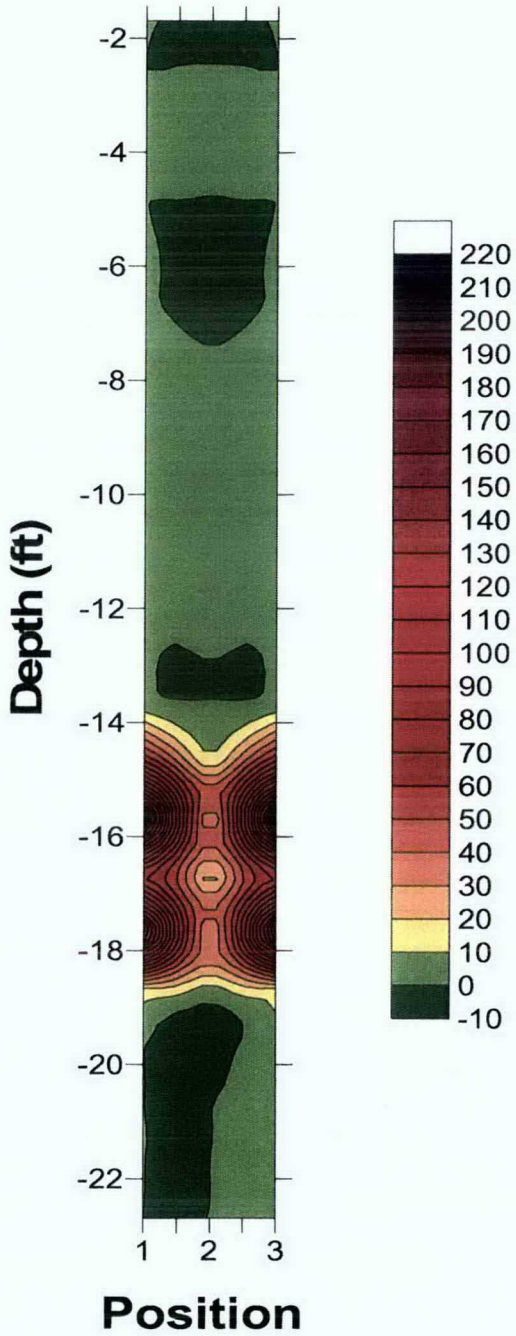
# MDP 2 VPU 7
# Gross Rate (mR/hr)



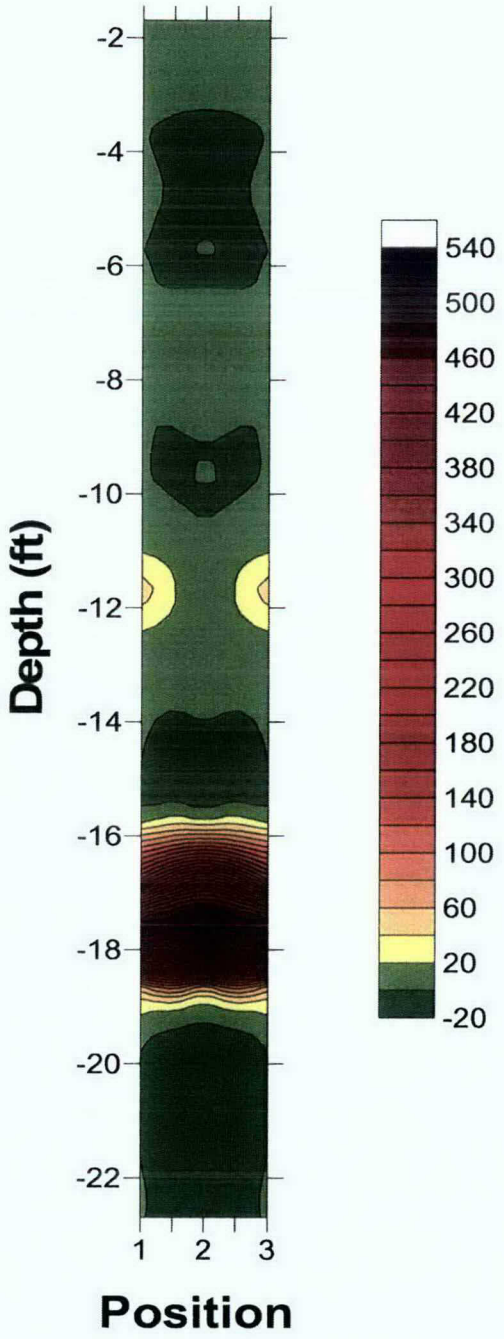
# MDP 2 VPU 8
## Gross Rate (mR/hr)



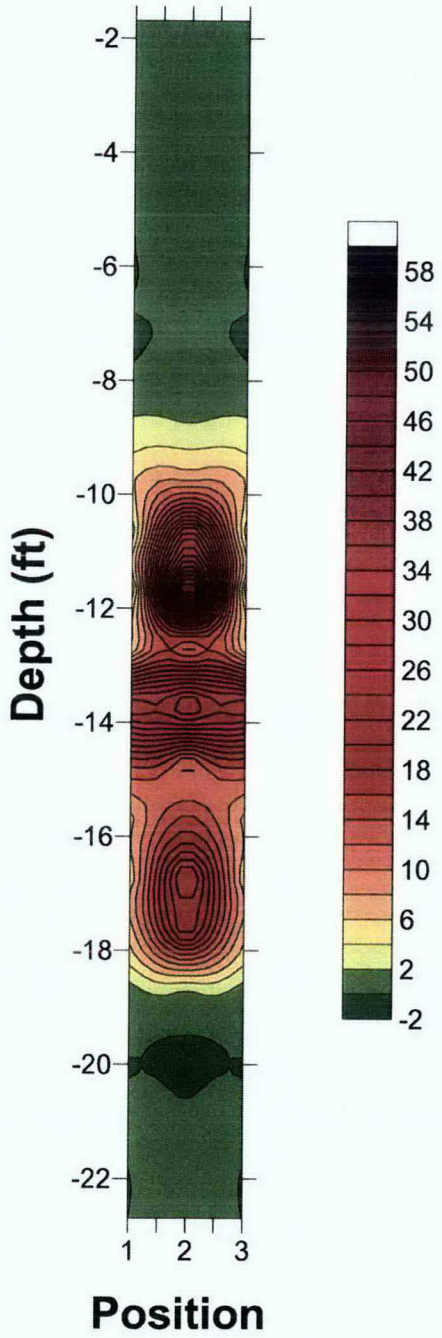
# MDP 2 VPU 9
# Gross Rate (mR/hr)



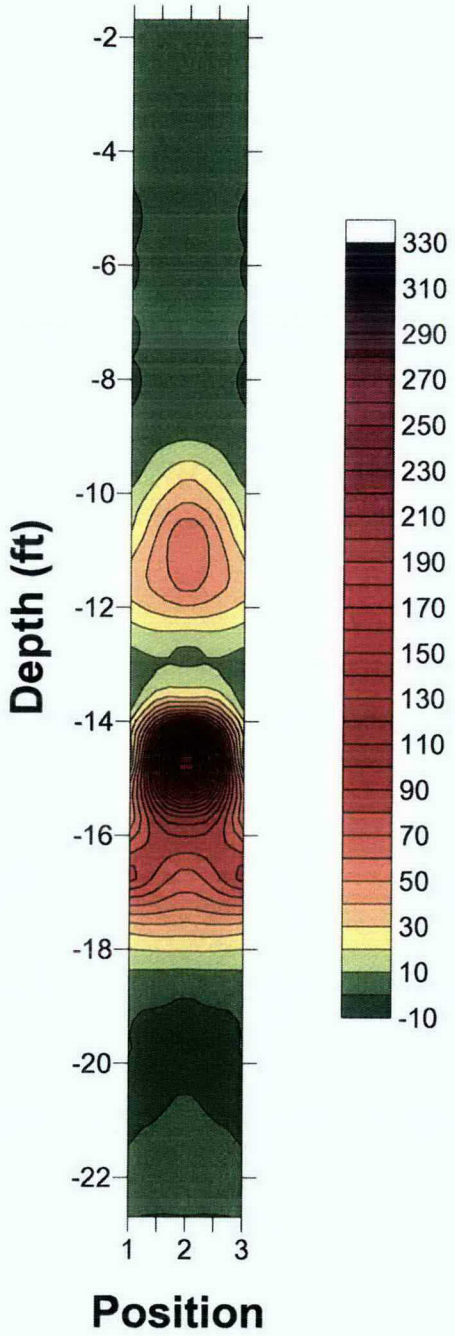
# MDP 2 VPU 10
## Gross Rate (mR/hr)



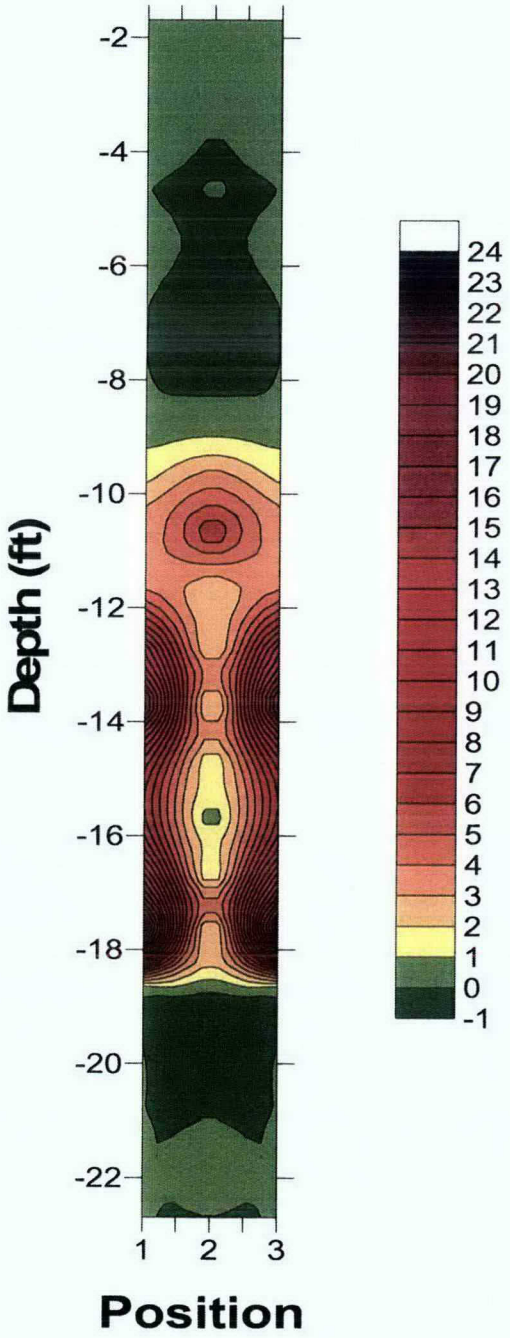
# MDP 2 VPU 11
# Gross Rate (mR/hr)



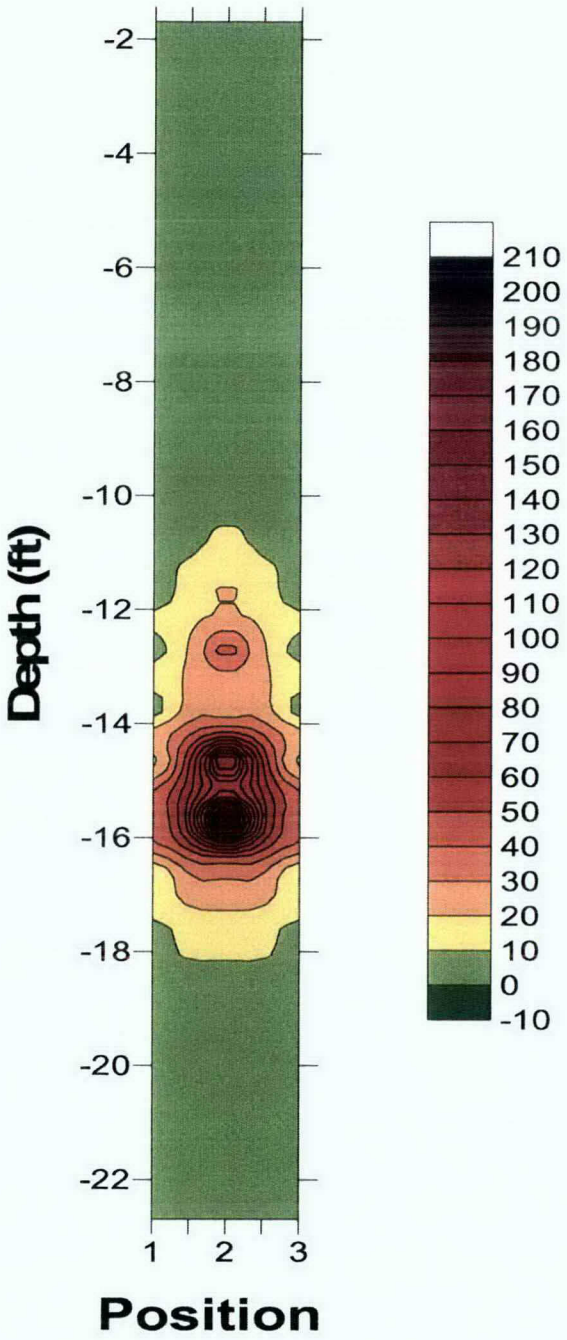
# MDP 2 VPU 12
# Gross Rate (mR/hr)



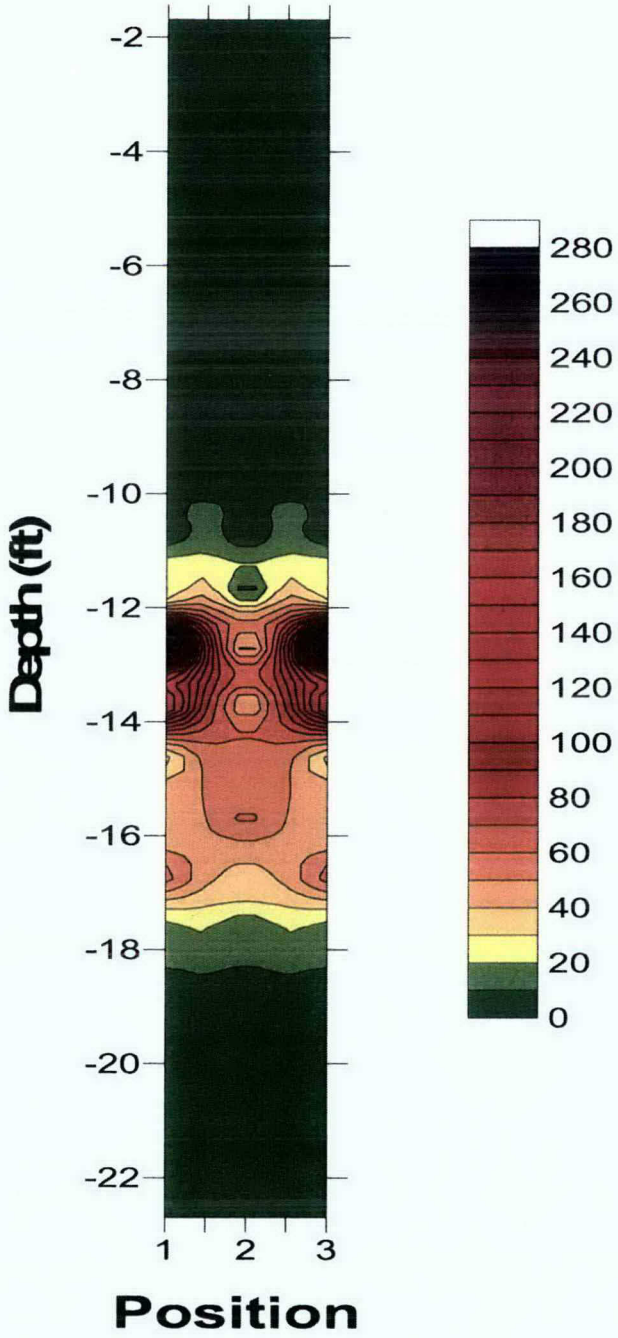
# MDP 2 VPU 13
## Gross Rate (mR/hr)



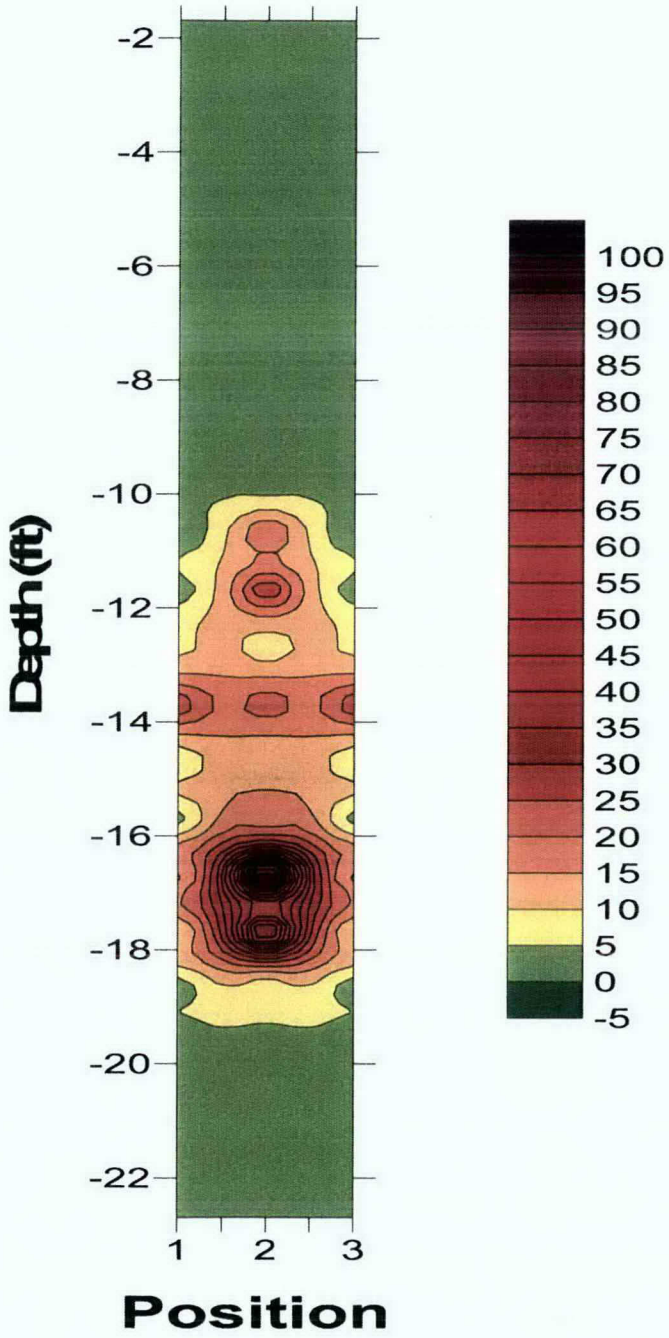
# MDP 2 VPU 14
## Gross Rate (mR/hr)



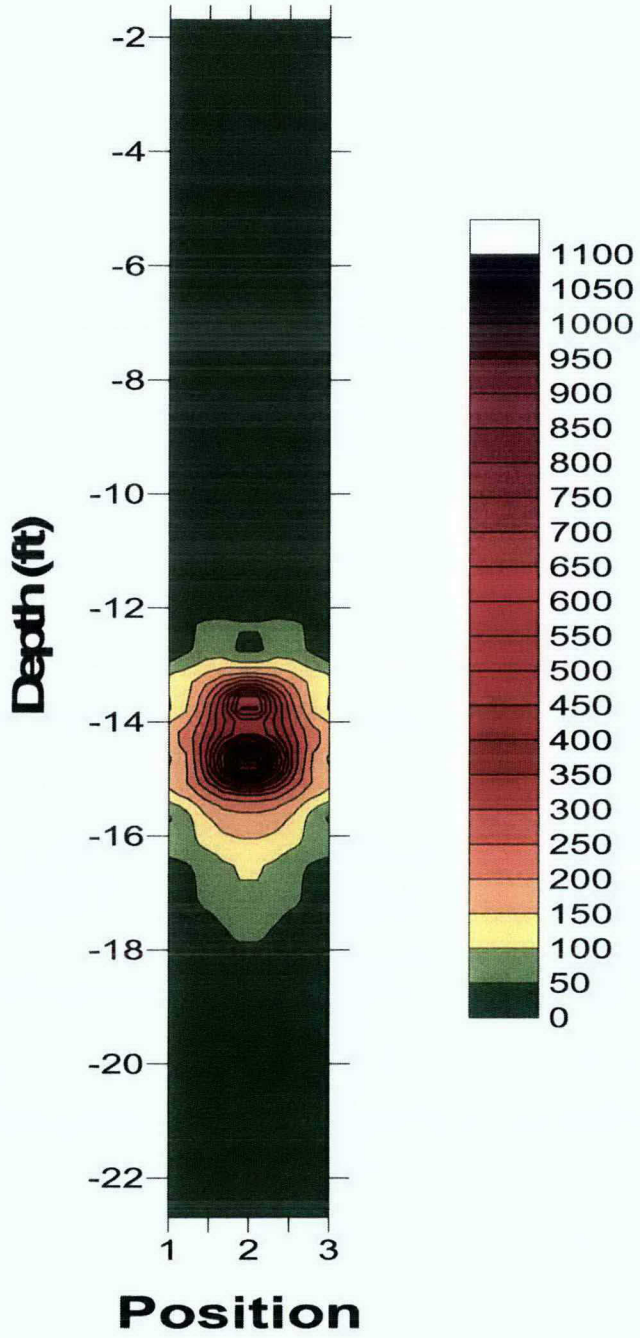
# MDP 2 VPU 15
## Gross Rate (mR/hr)



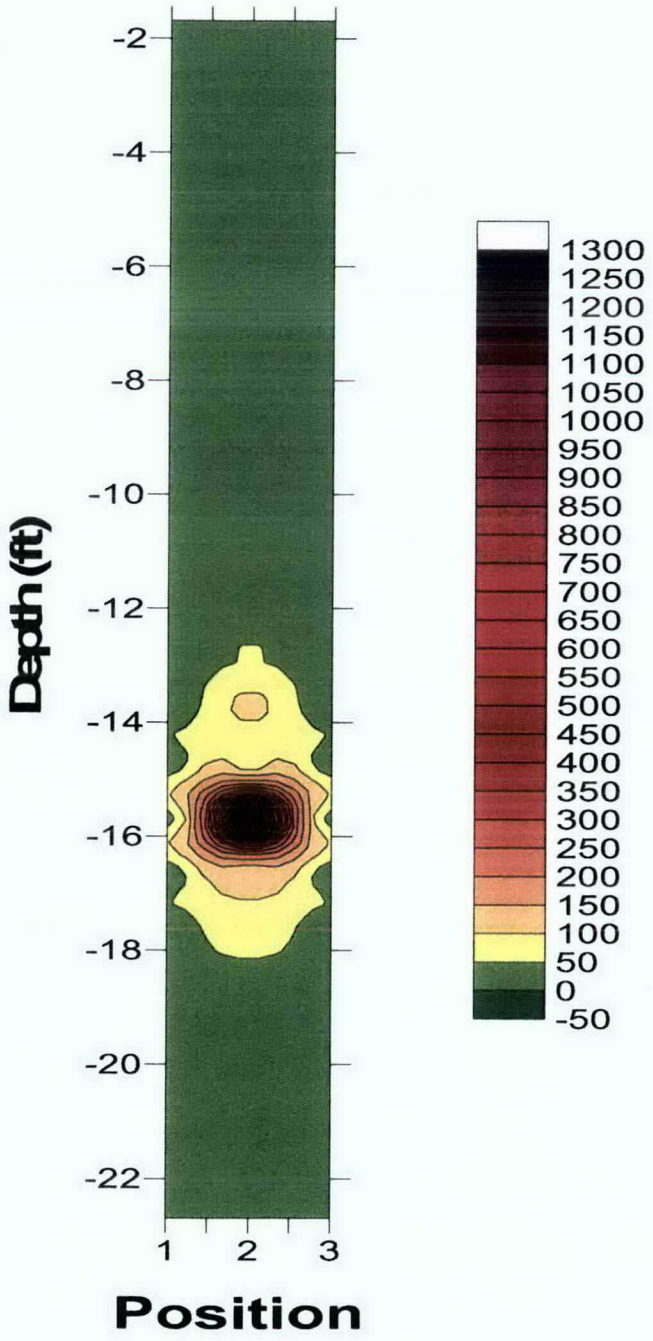
# MDP 2 VPU 16
## Gross Rate (mR/hr)



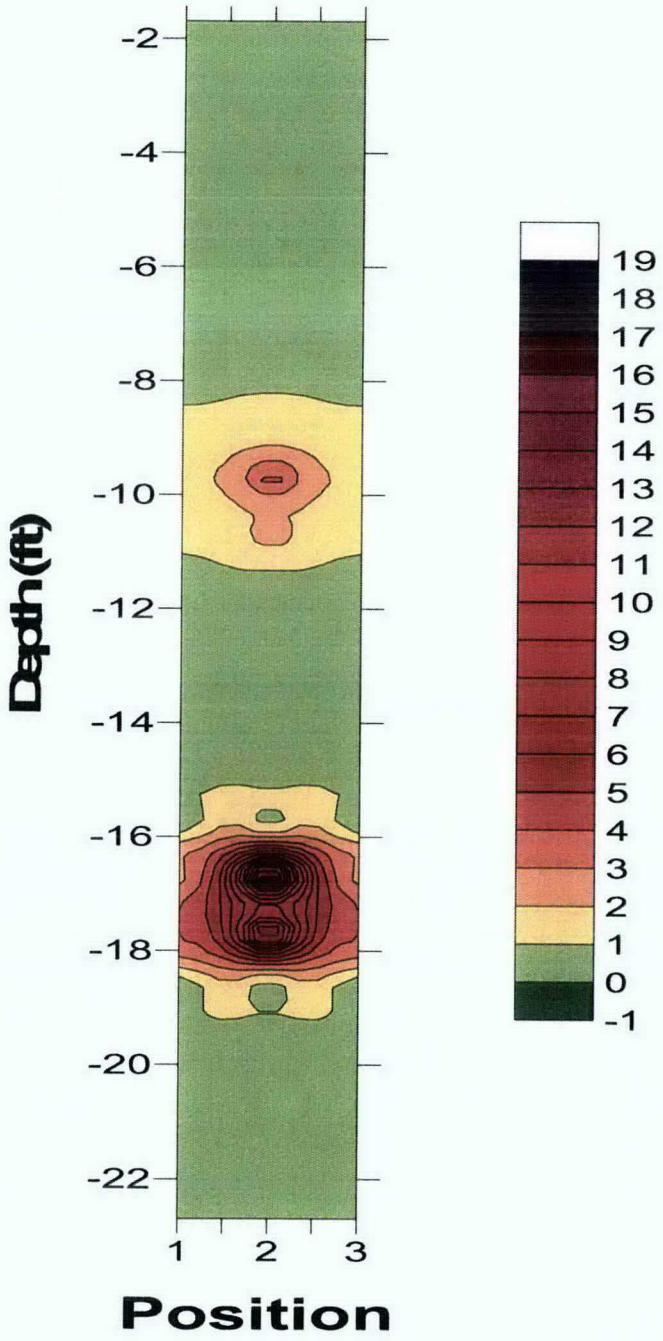
# MDP 2 VPU 17
## Gross Rate (mR/hr)



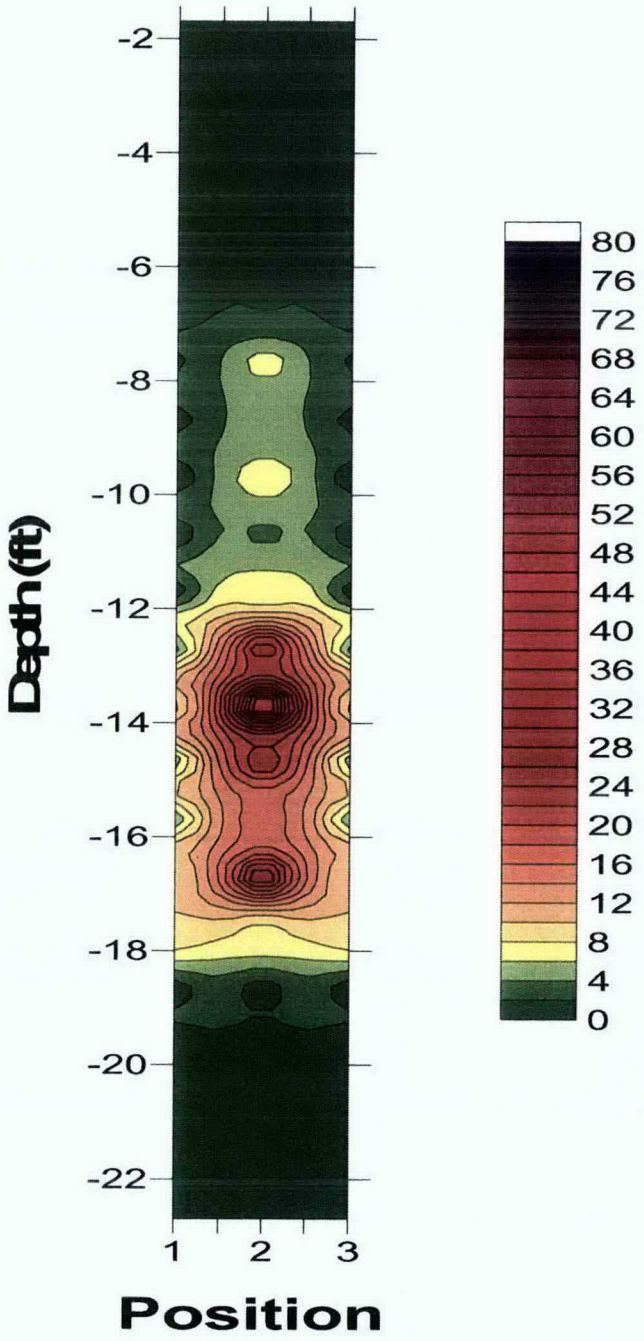
# MDP 2 VPU 18
## Gross Rate (mR/hr)



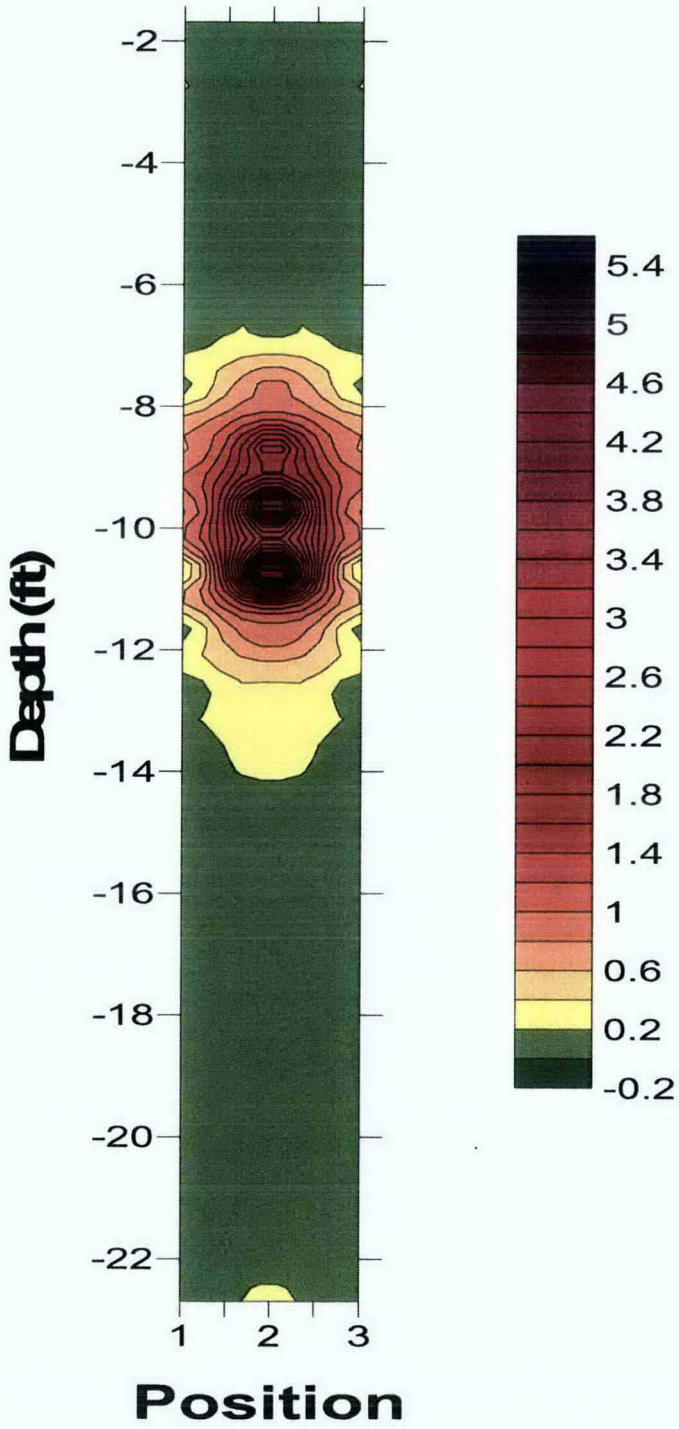
# MDP 2 VPU 19
## Gross Rate (mR/hr)



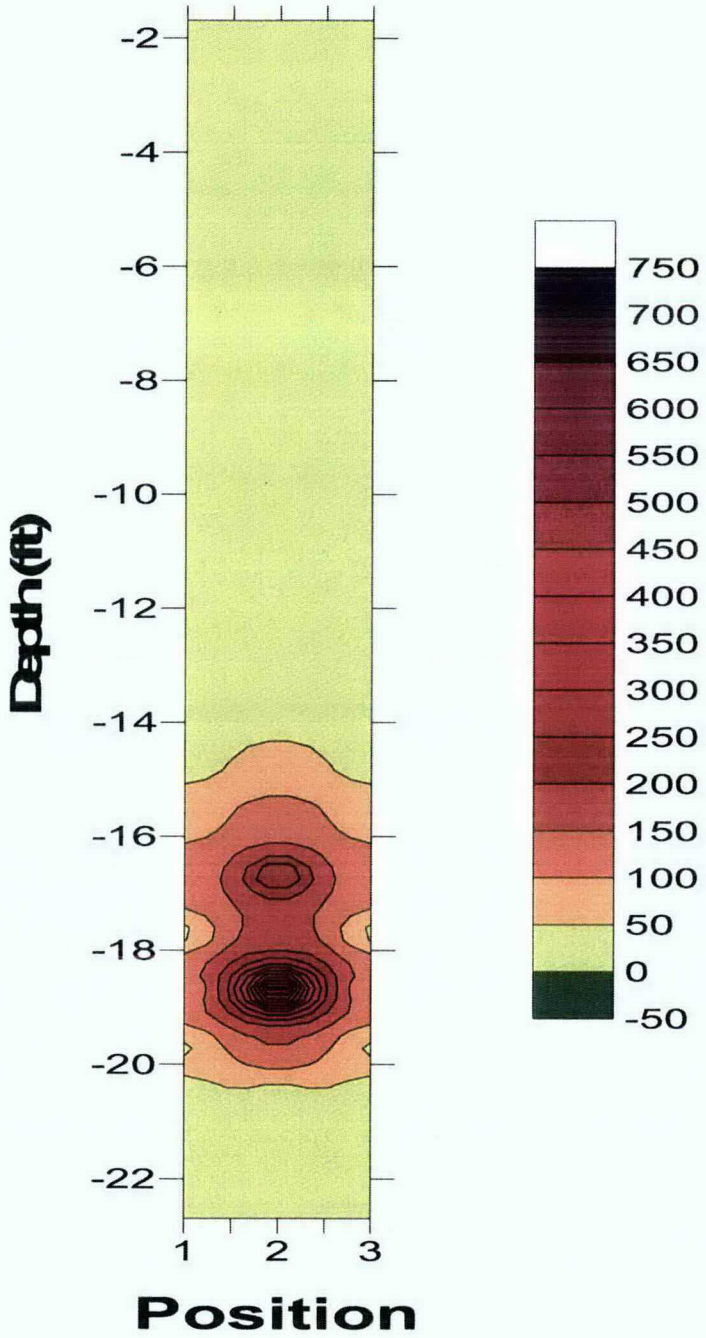
# MDP 2 VPU 20
## Gross Rate (mR/hr)

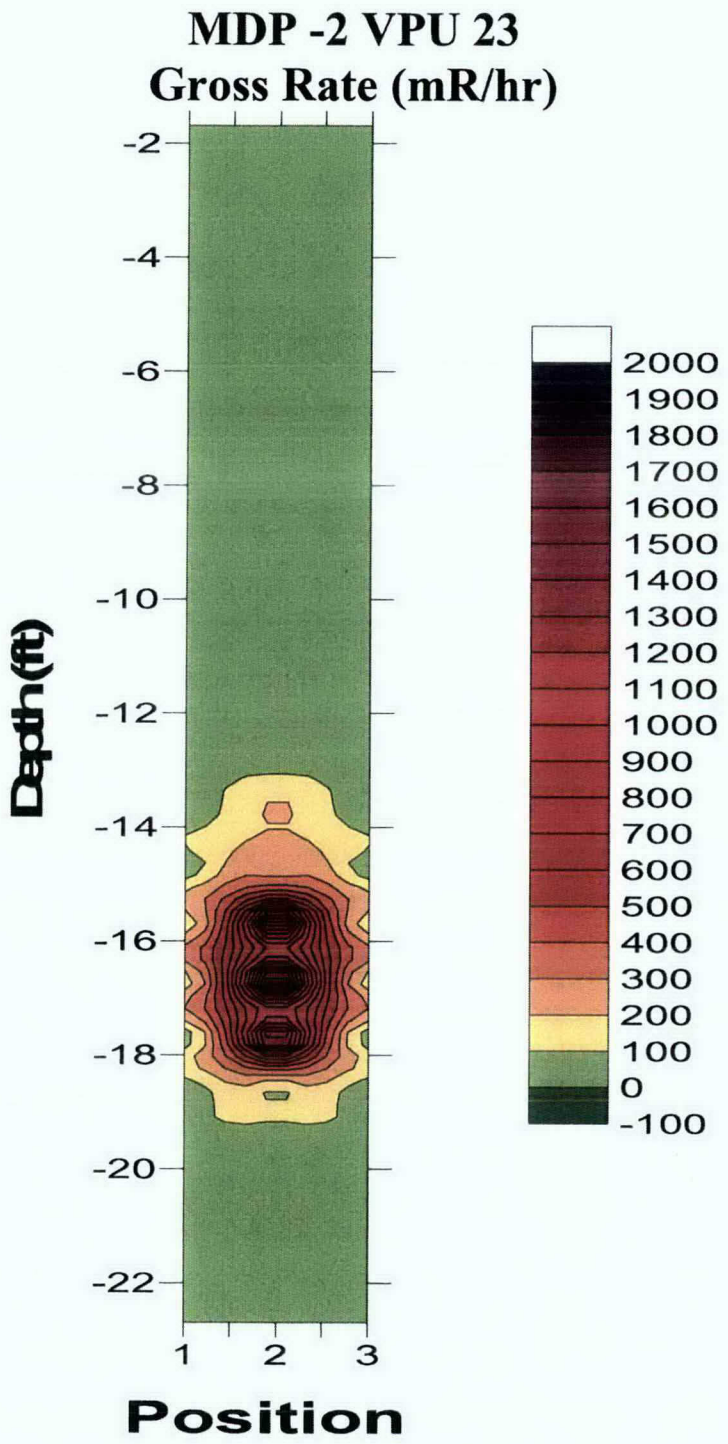


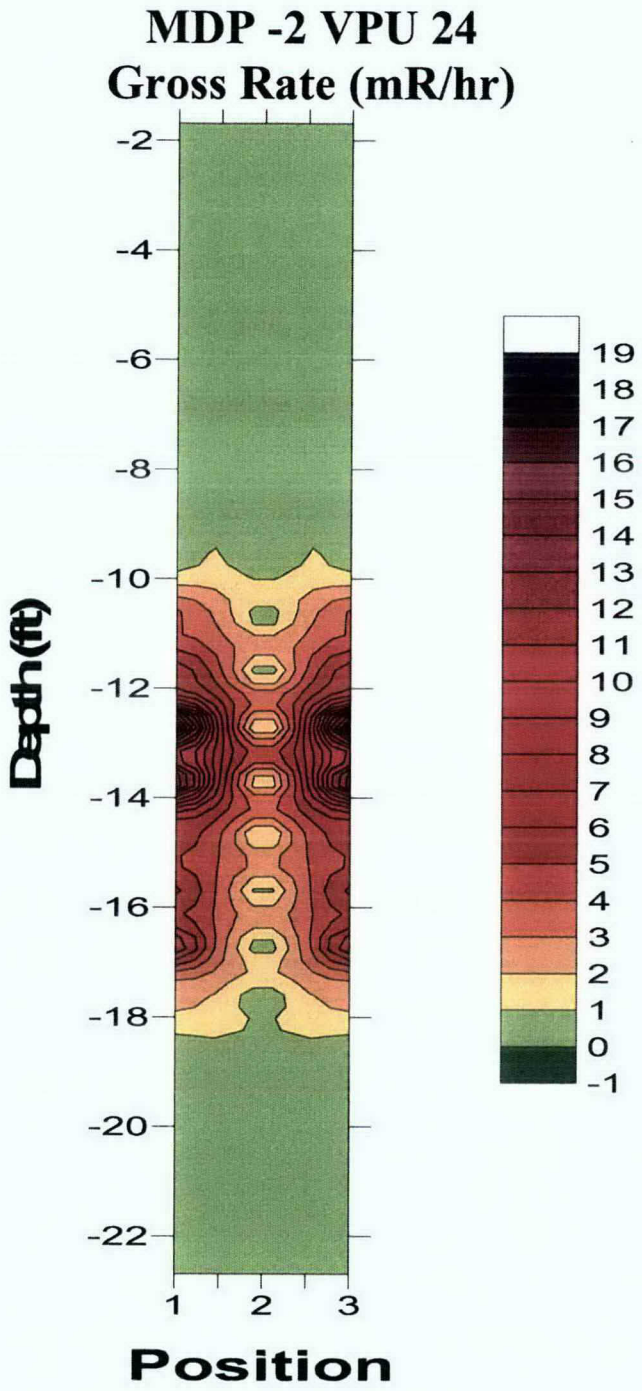
# MDP -2 VPU 21
## Gross Rate (mR/hr)



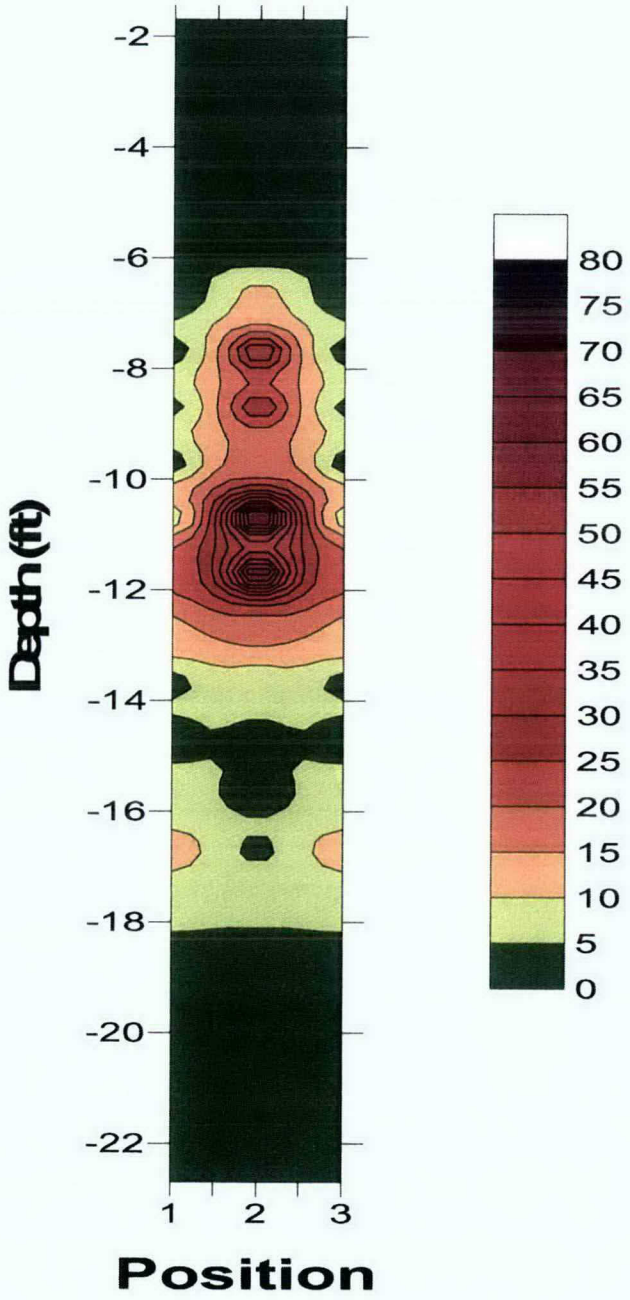
# MDP -2 VPU 22
## Gross Rate (mR/hr)

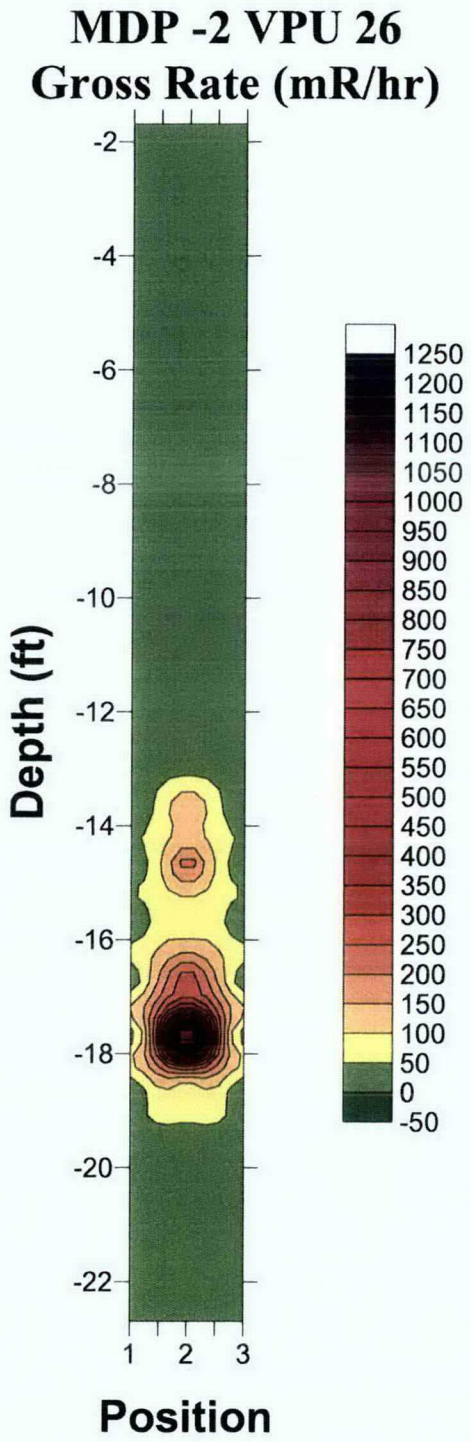


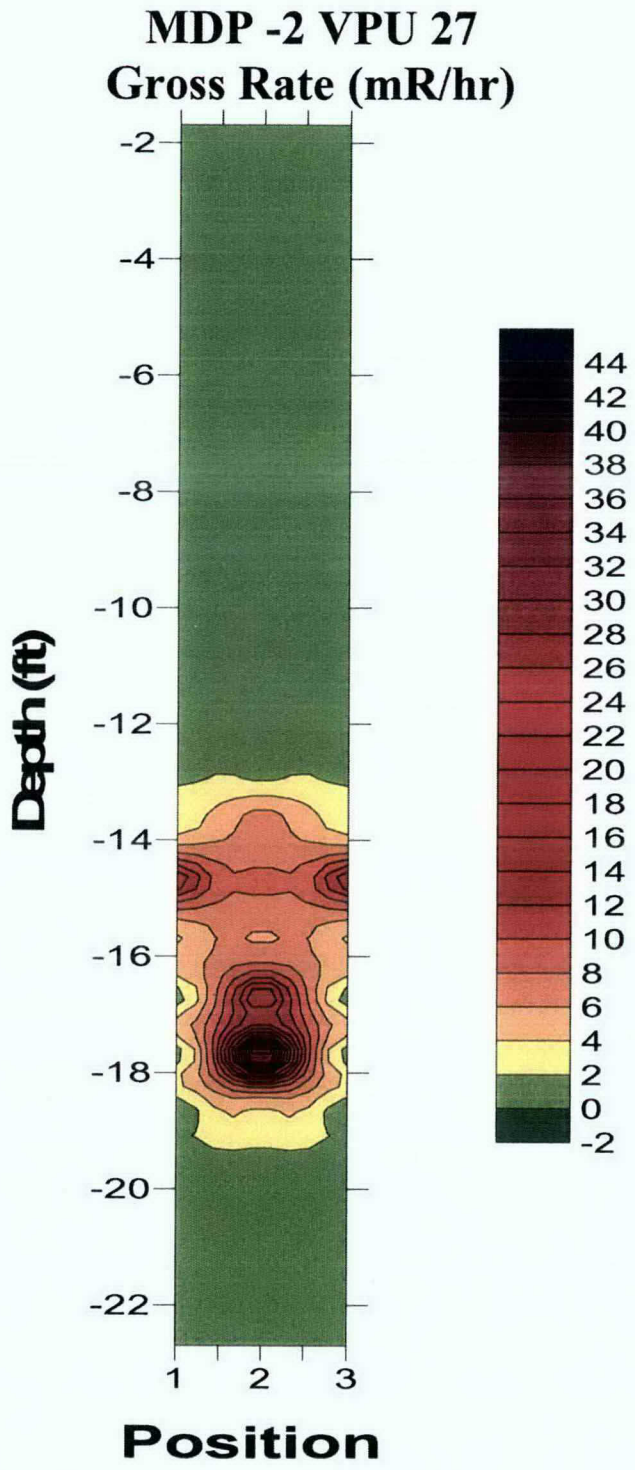

MDP -2 VPU 23
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
-100

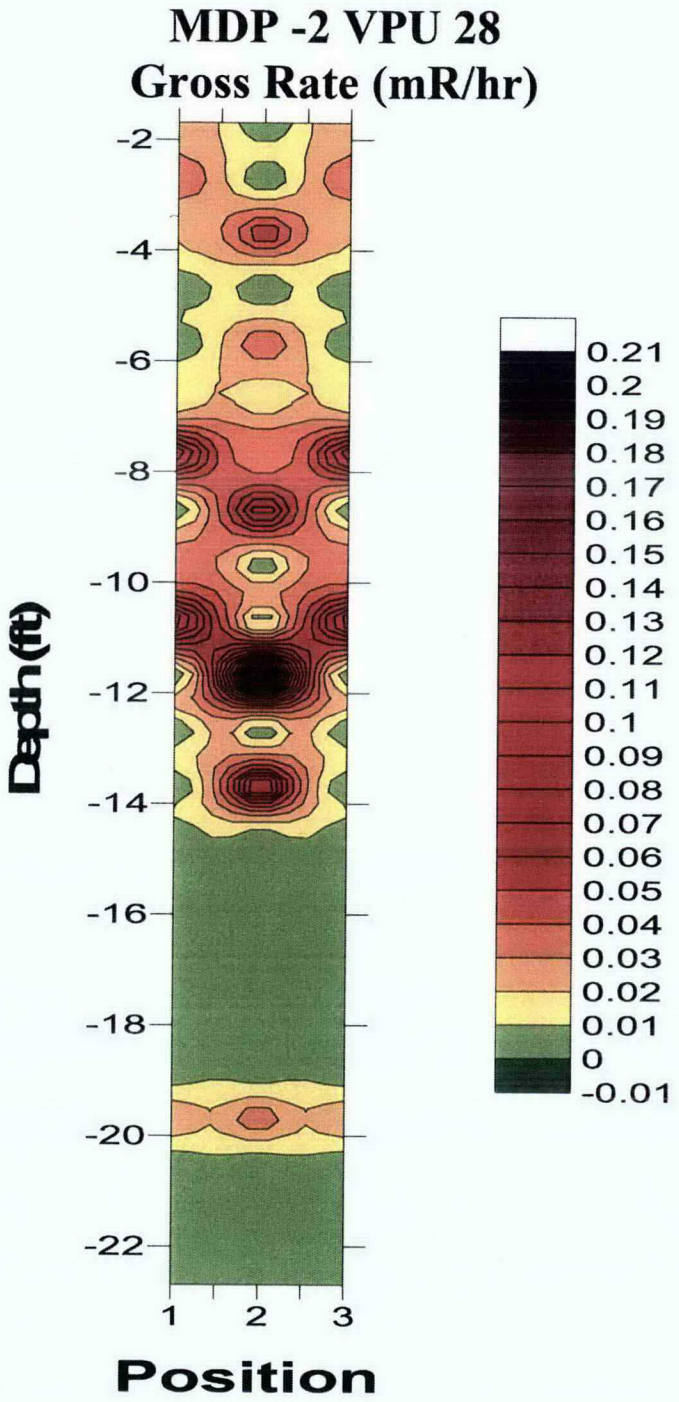

MDP -2 VPU 24
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1

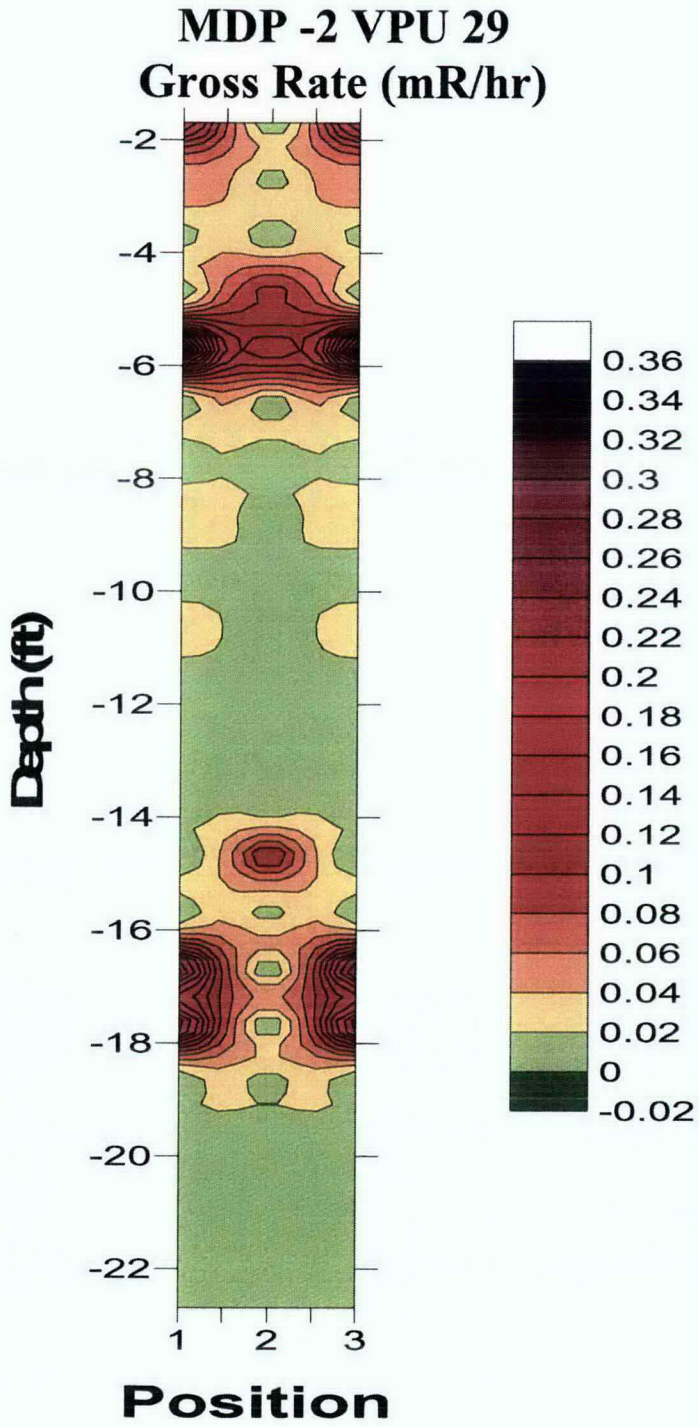
# MDP -2 VPU 25
# Gross Rate (mR/hr)

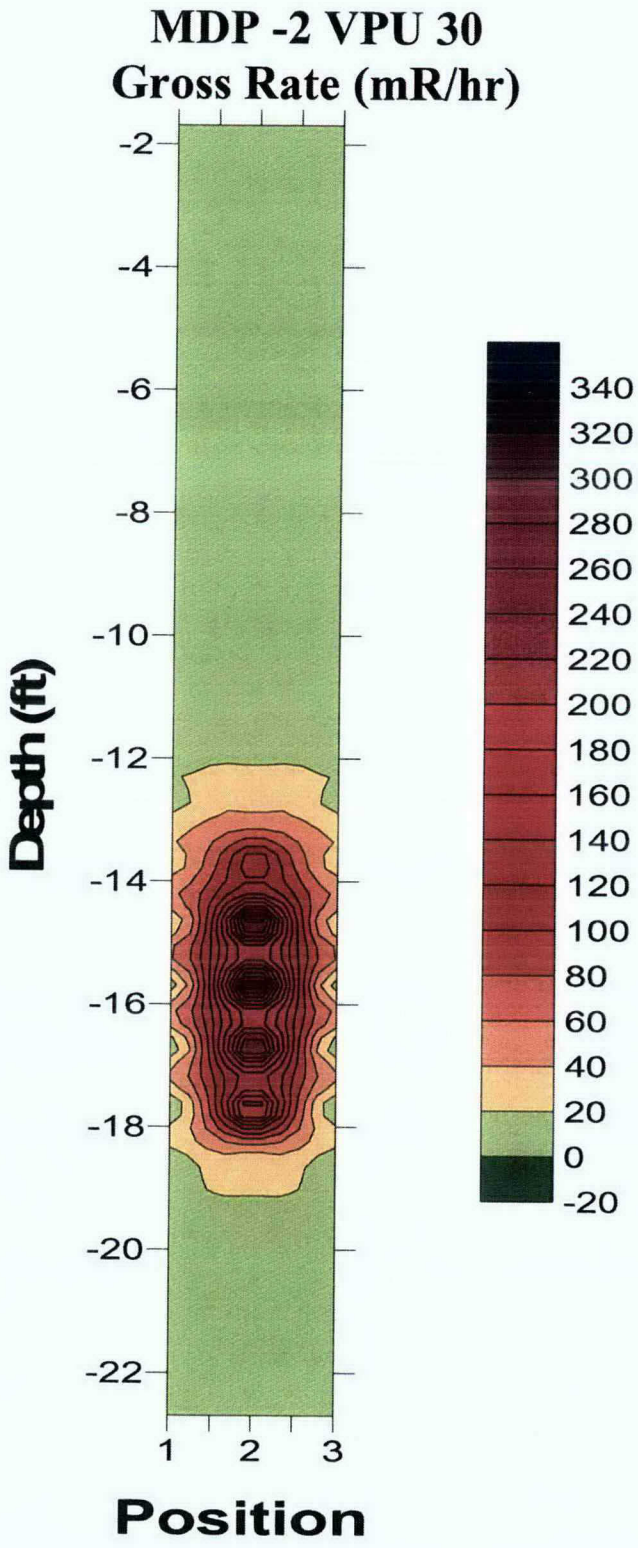



MDP -2 VPU 26
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
-50

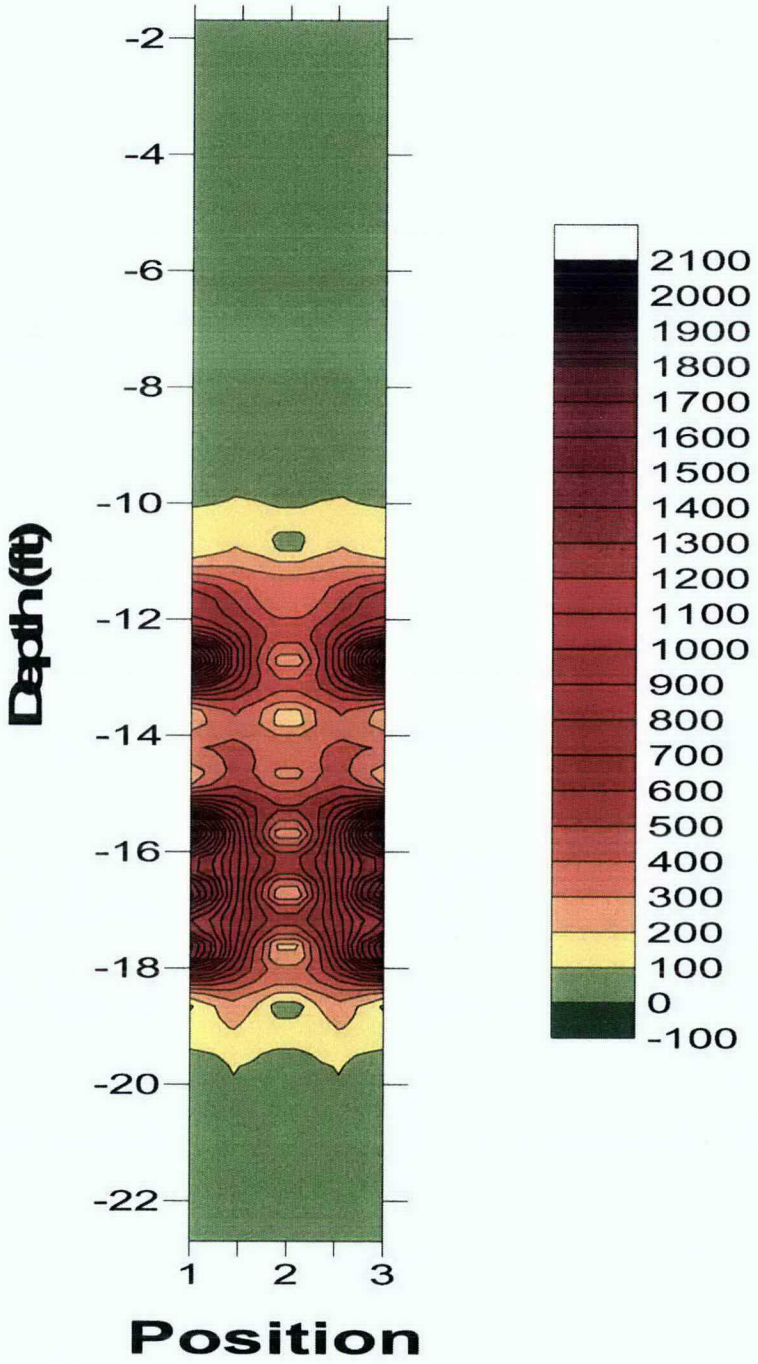

MDP -2 VPU 27
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
44
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2


MDP -2 VPU 28
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
0.21
0.2
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01

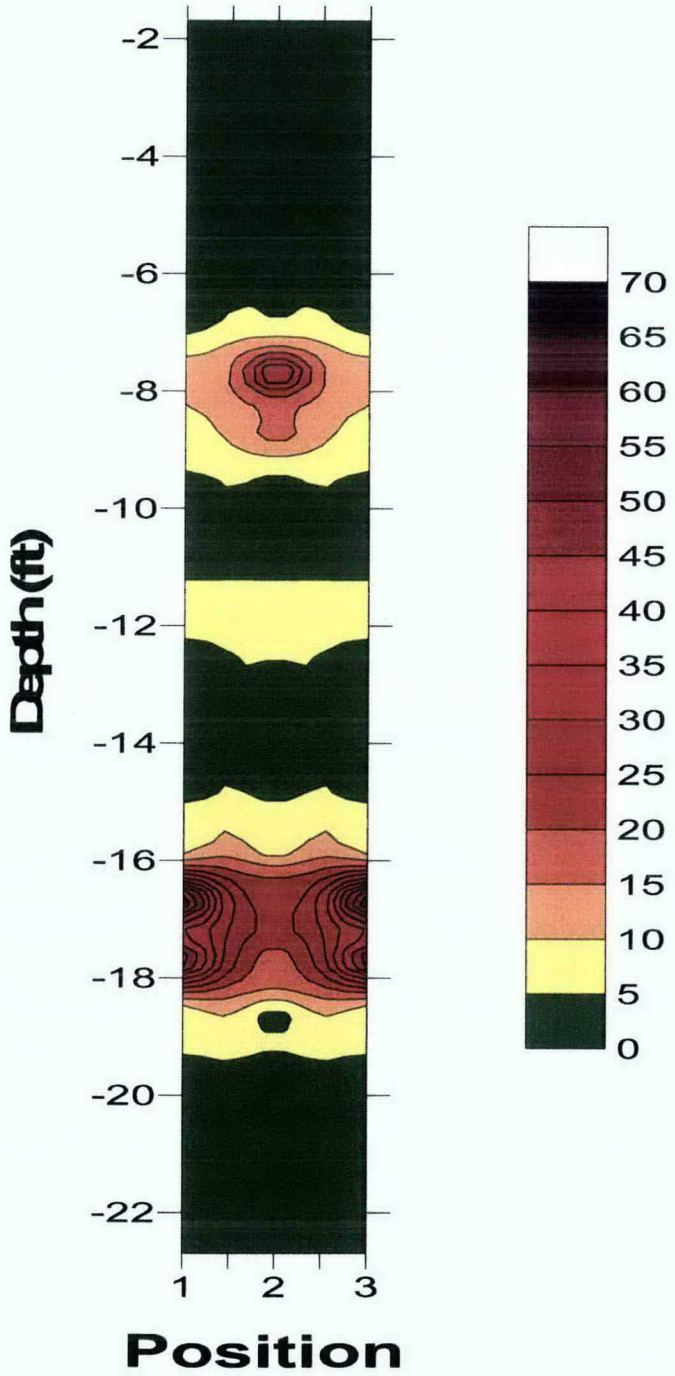

MDP -2 VPU 29
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
0.36
0.34
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02


MDP -2 VPU 30
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20

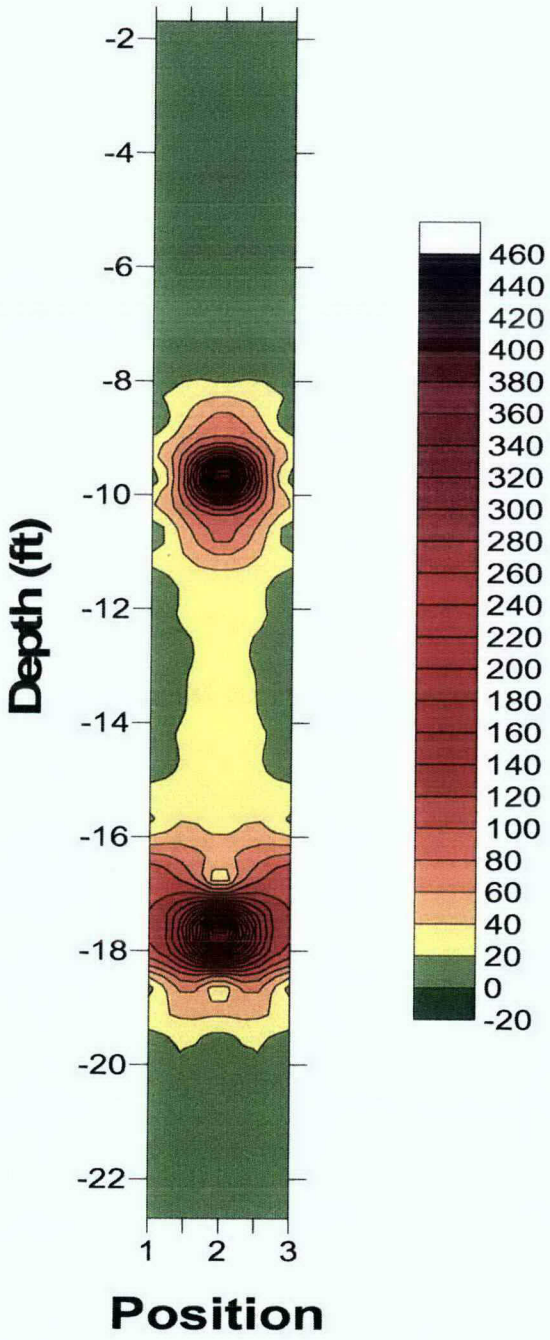
# MDP -2 VPU 31
## Gross Rate (mR/hr)

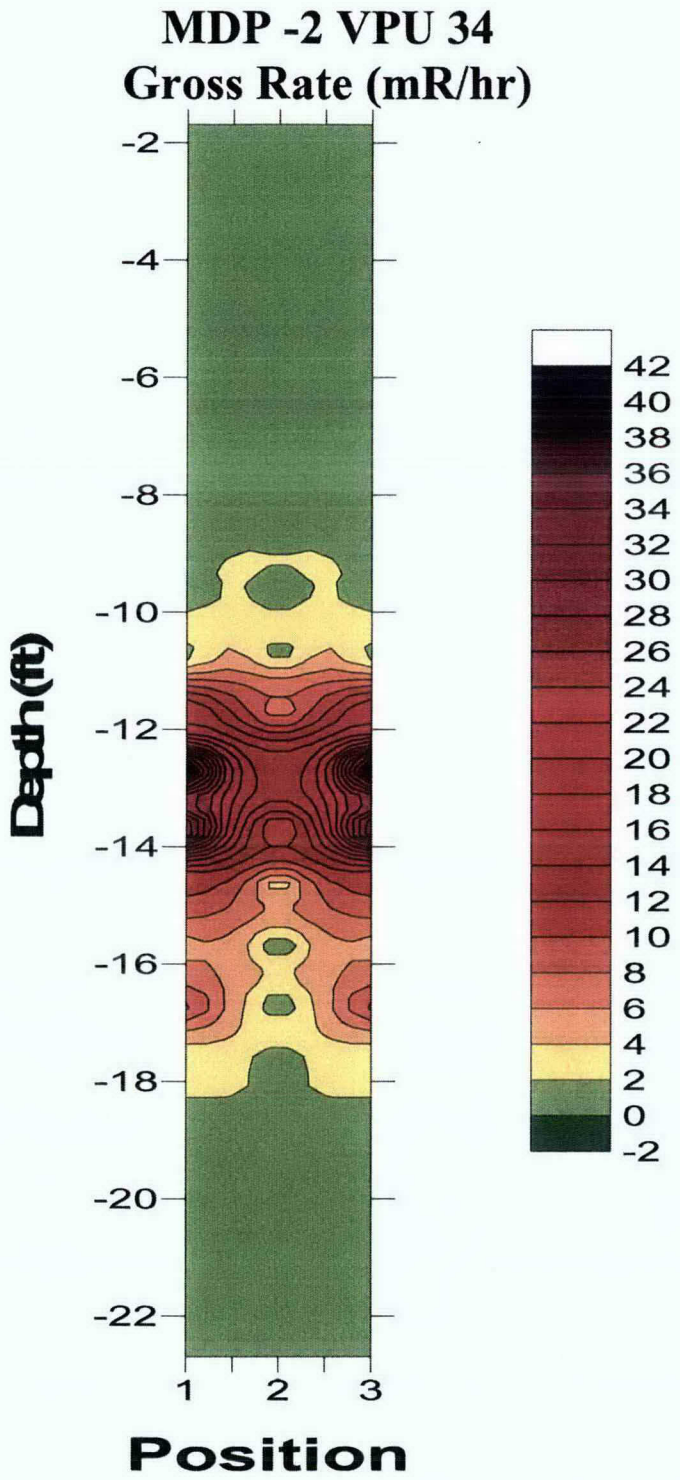


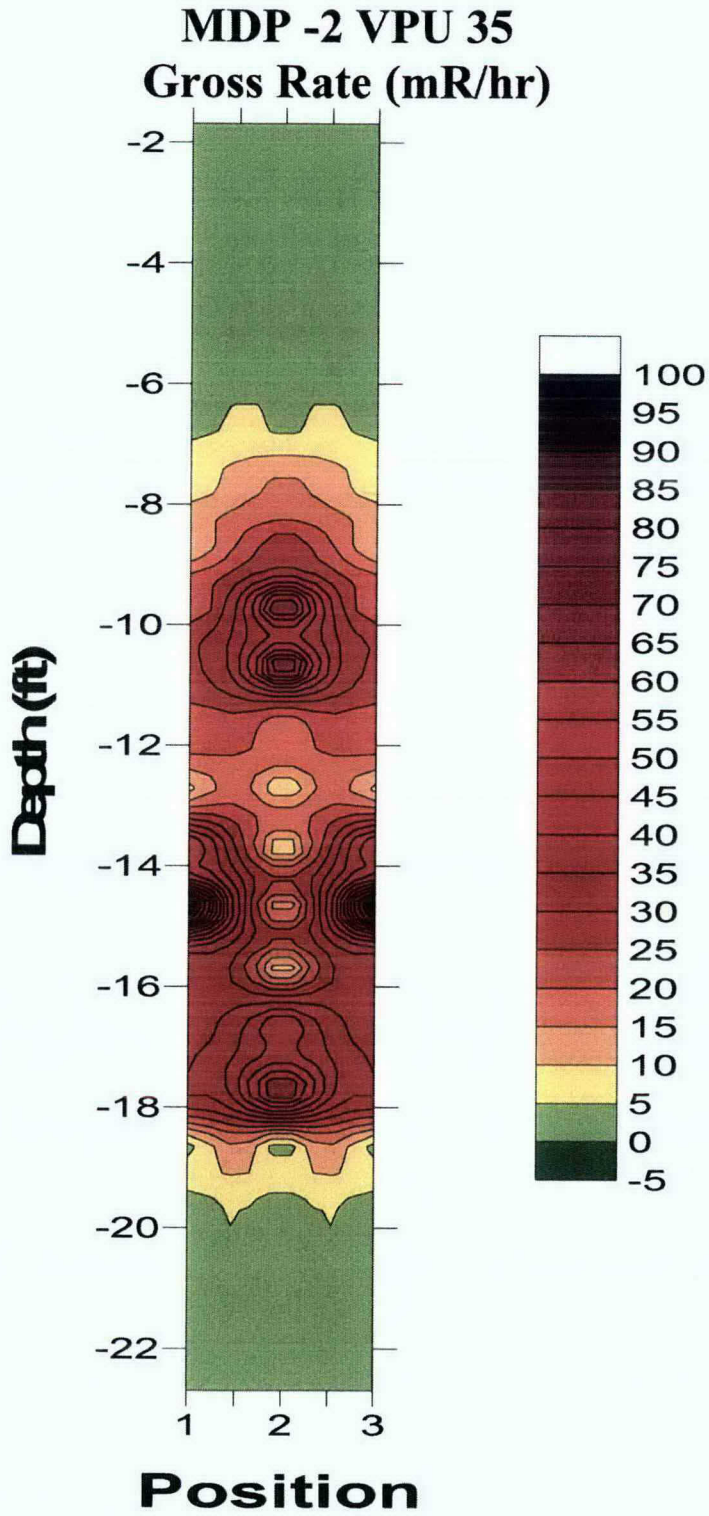
# MDP -2 VPU 32
## Gross Rate (mR/hr)



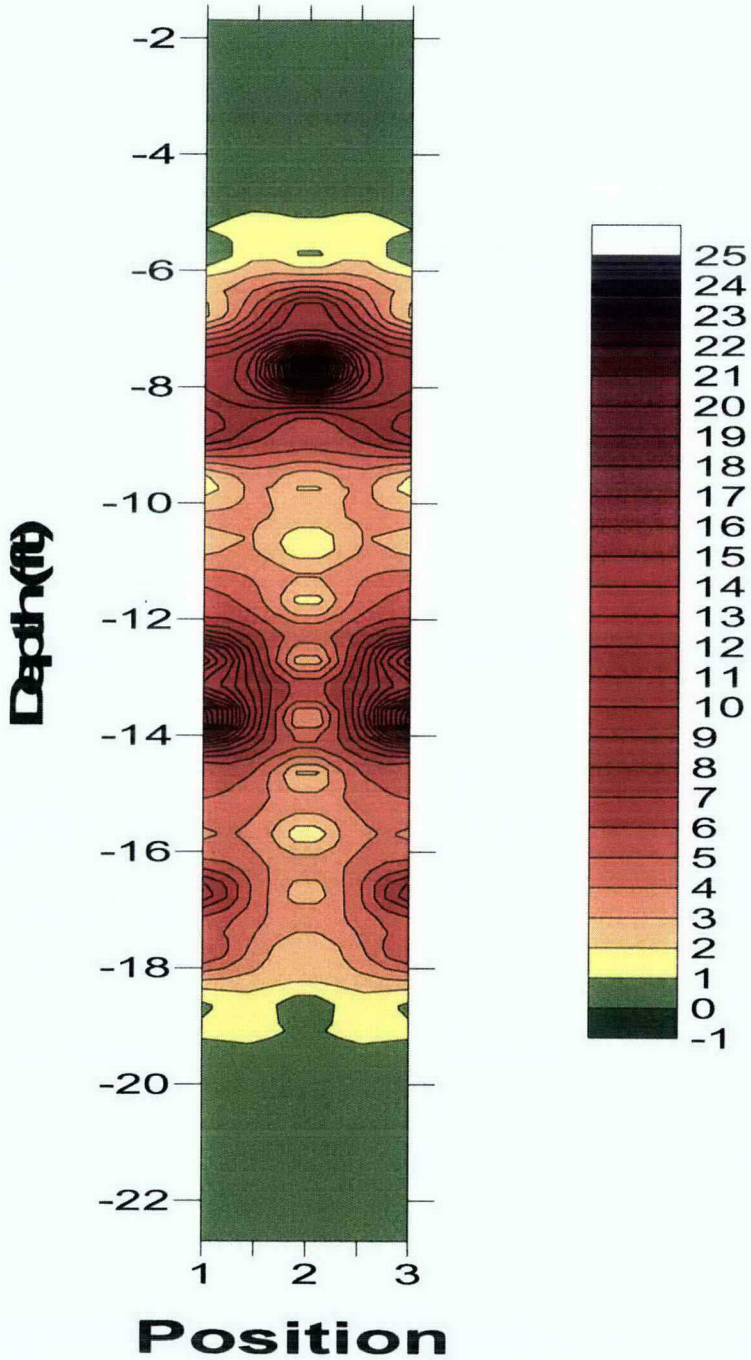
# MDP -2 VPU 33
## Gross Rate (mR/hr)

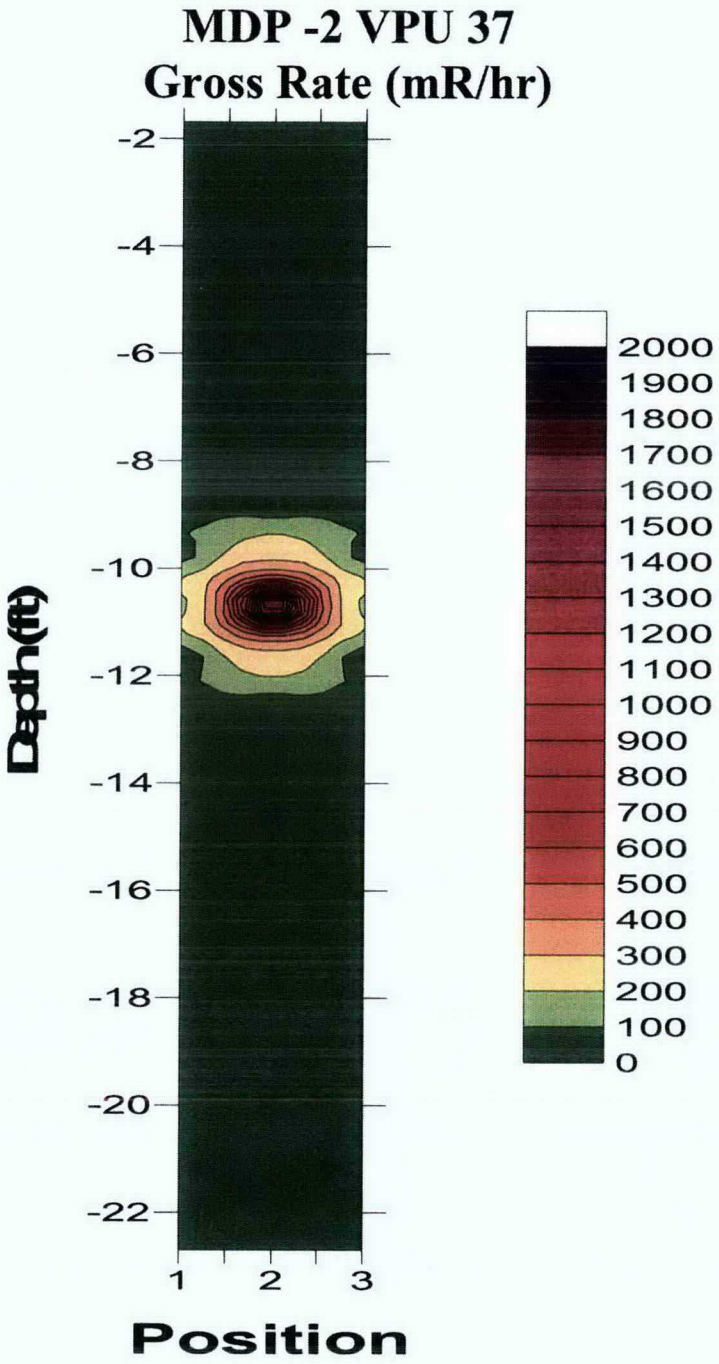


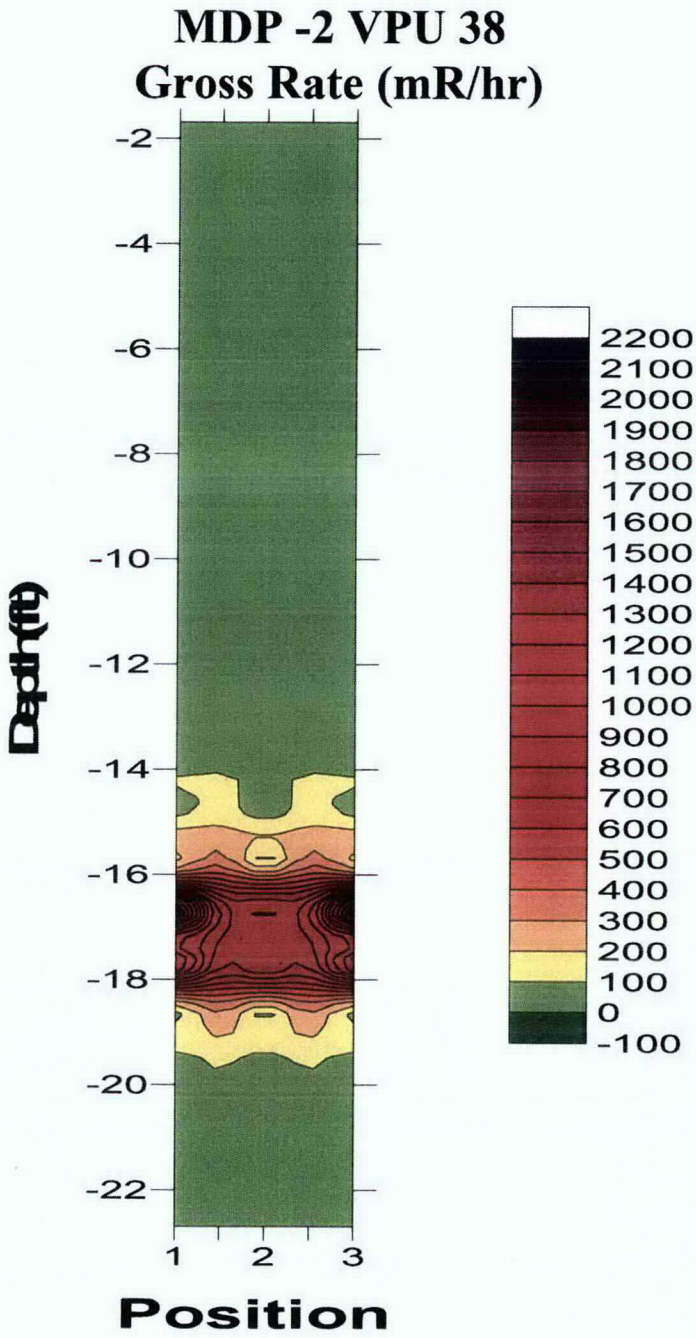

MDP -2 VPU 34
Gross Rate (mR/hr)
Depth(ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
42
40
38
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2


MDP -2 VPU 35
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5

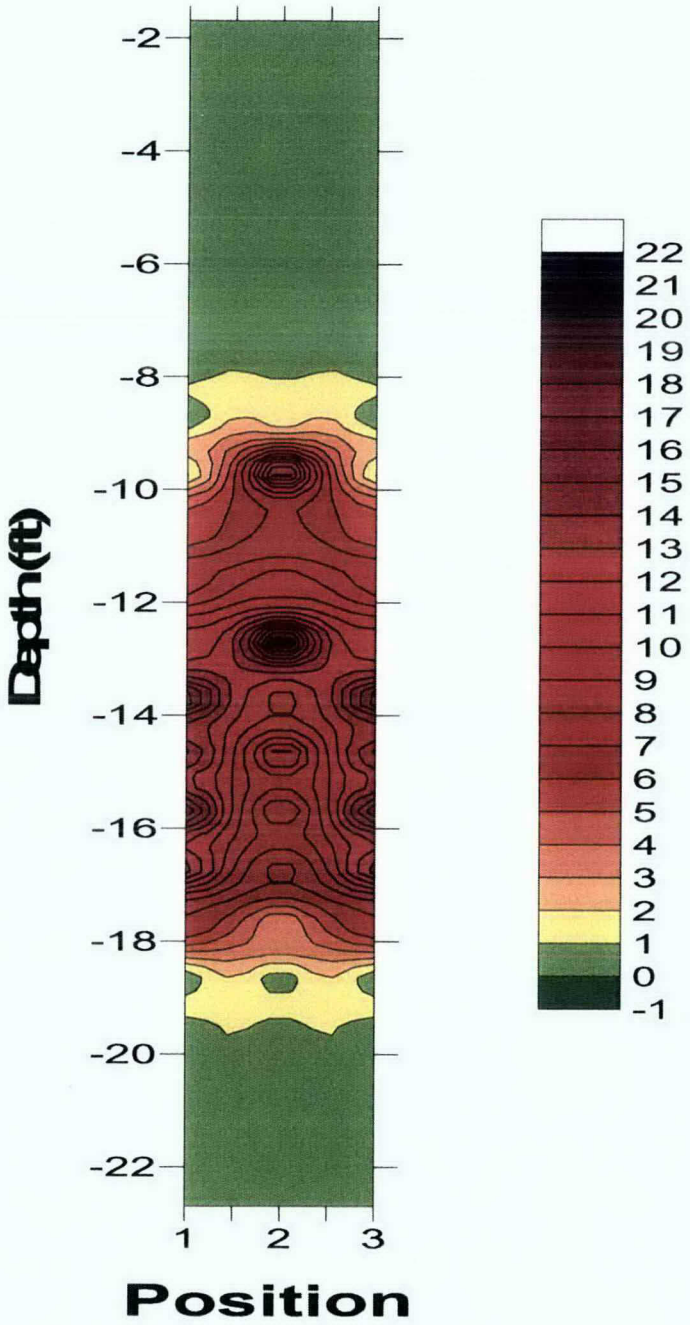
# MDP -2 VPU 36
# Gross Rate (mR/hr)



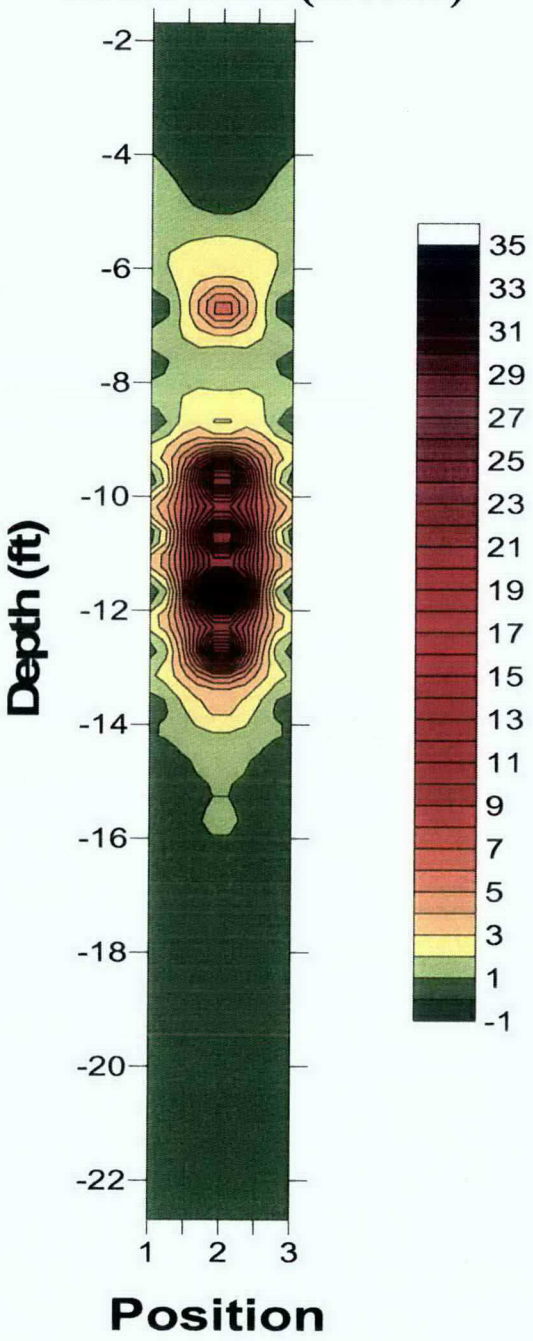

MDP -2 VPU 37
Gross Rate (mR/hr)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
Depth(ft)
1
2
3
Position
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0

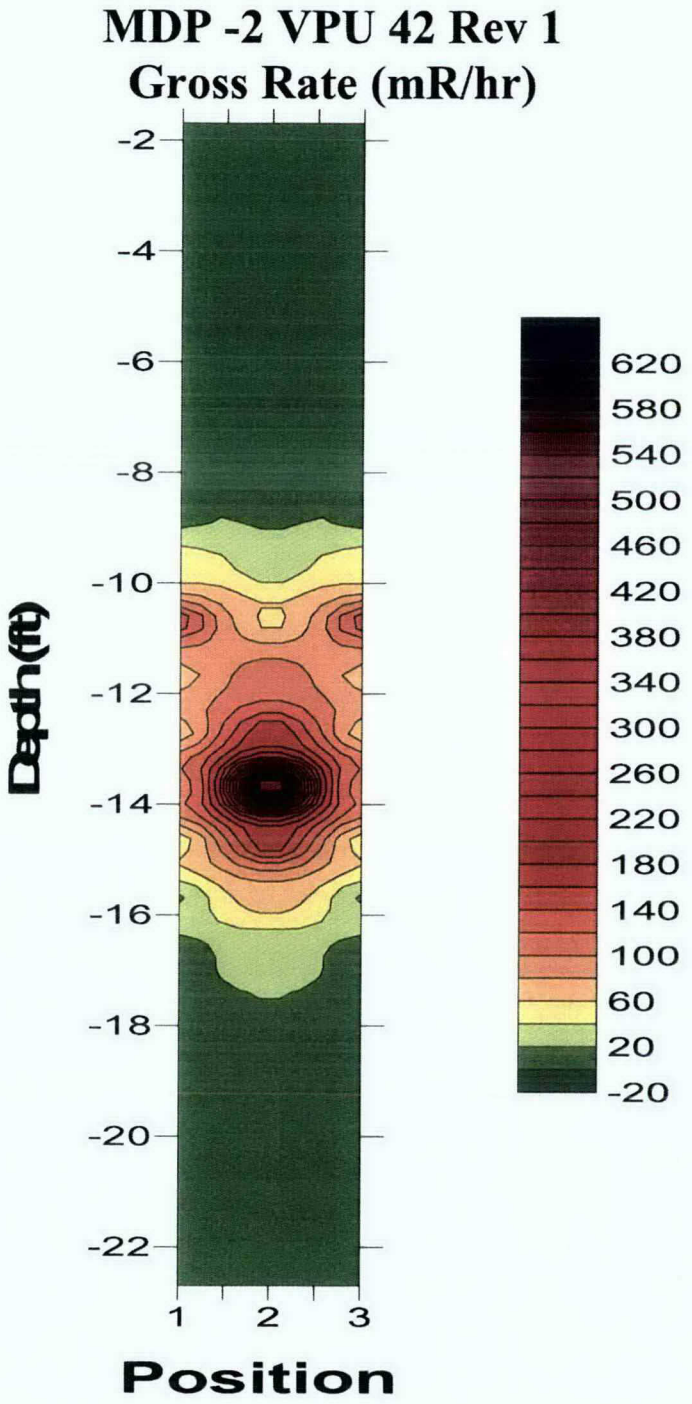

MDP -2 VPU 38
Gross Rate (mR/hr)
Depth(ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
-100

# MDP 2 VPU 39
## Gross Rate (mR/hr)

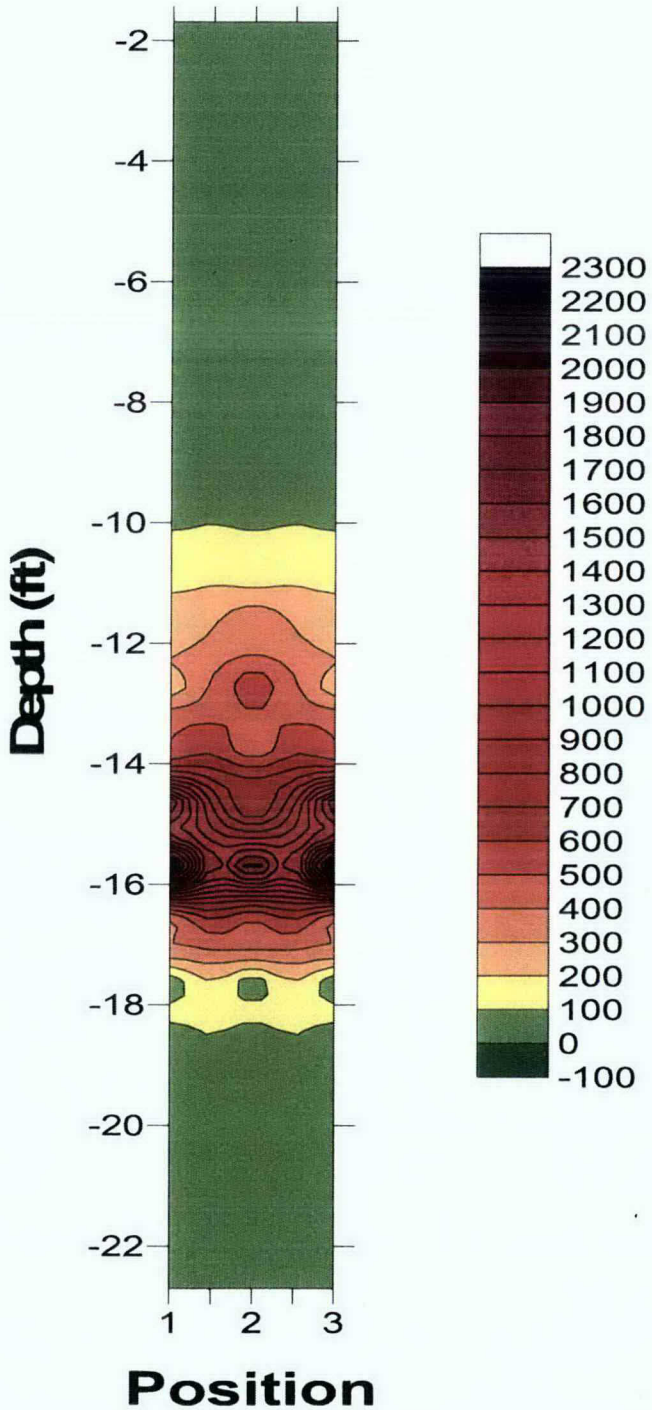


# MDP -2 VPU 41 Rev 1
## Gross Rate (mR/hr)

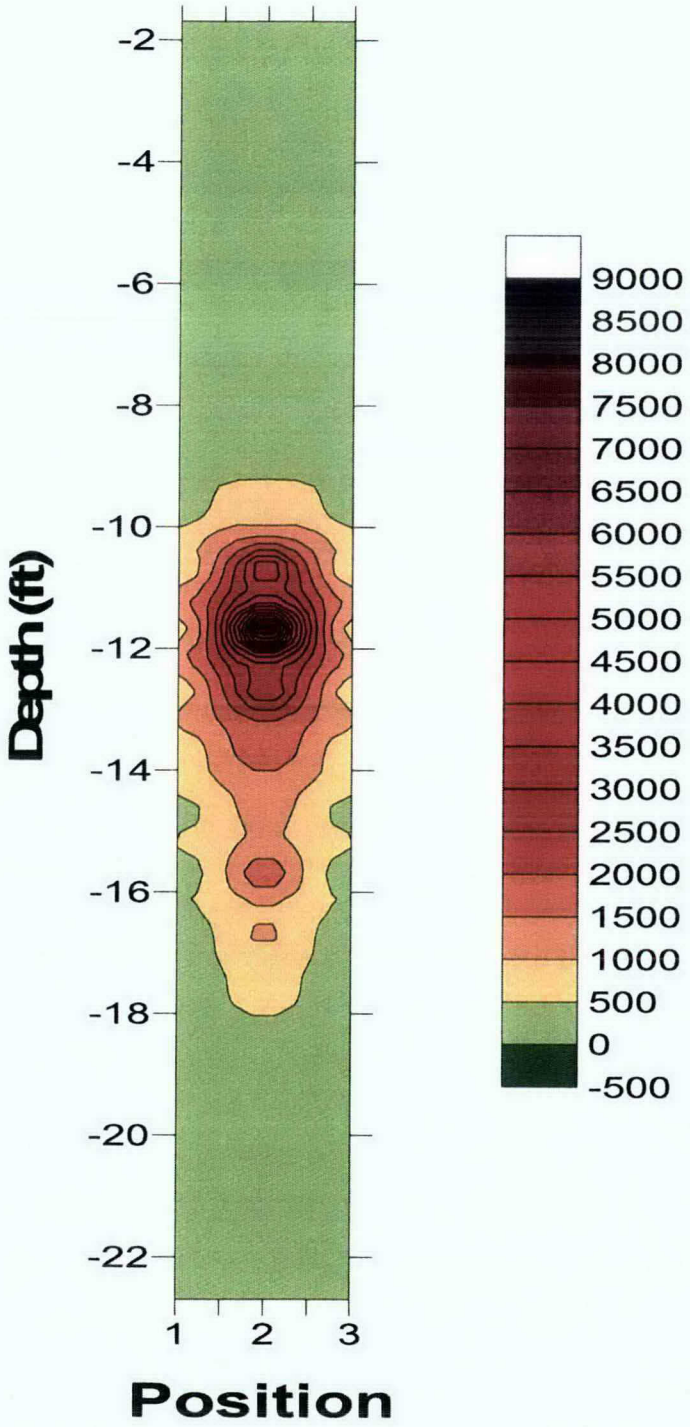


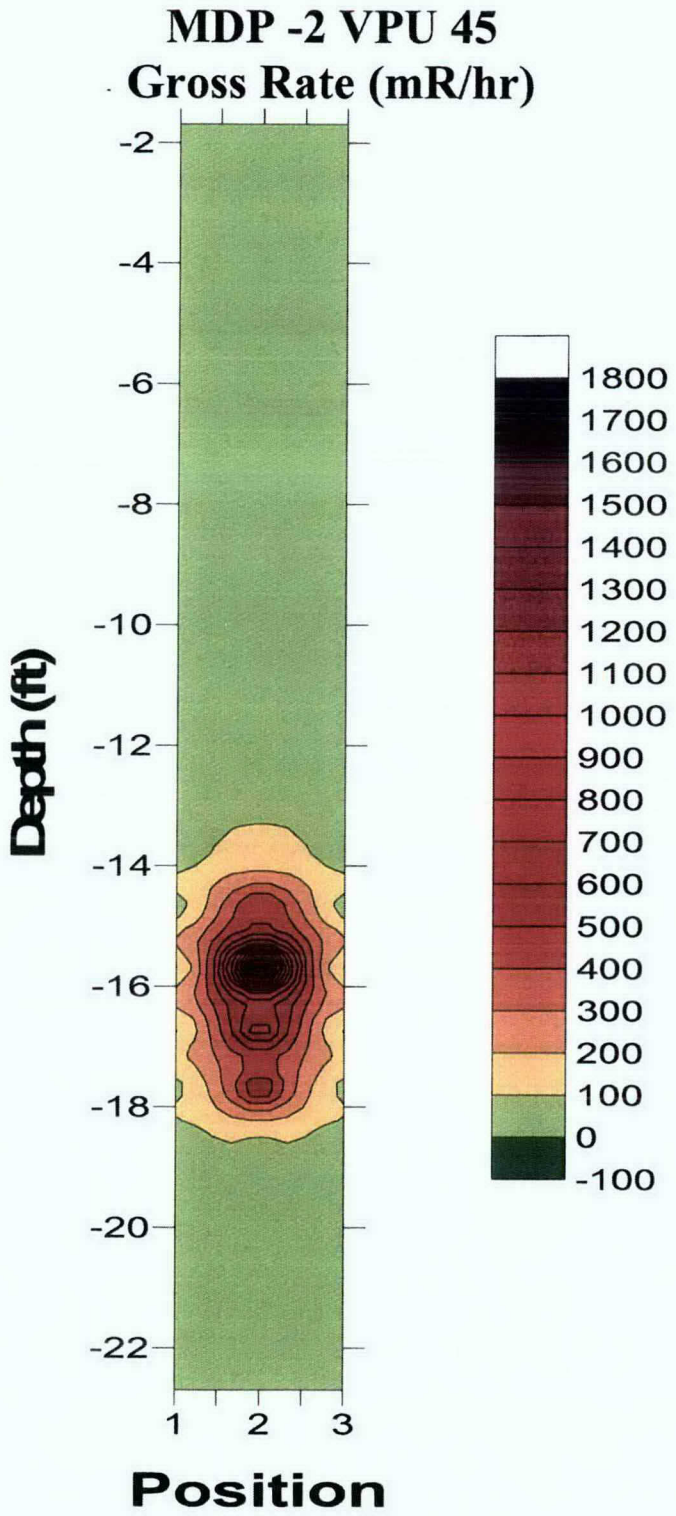

MDP -2 VPU 42 Rev 1
Gross Rate (mR/hr)
Depth(ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
620
580
540
500
460
420
380
340
300
260
220
180
140
100
60
20
-20

# MDP -2 VPU 43
## Gross Rate (mR/hr)

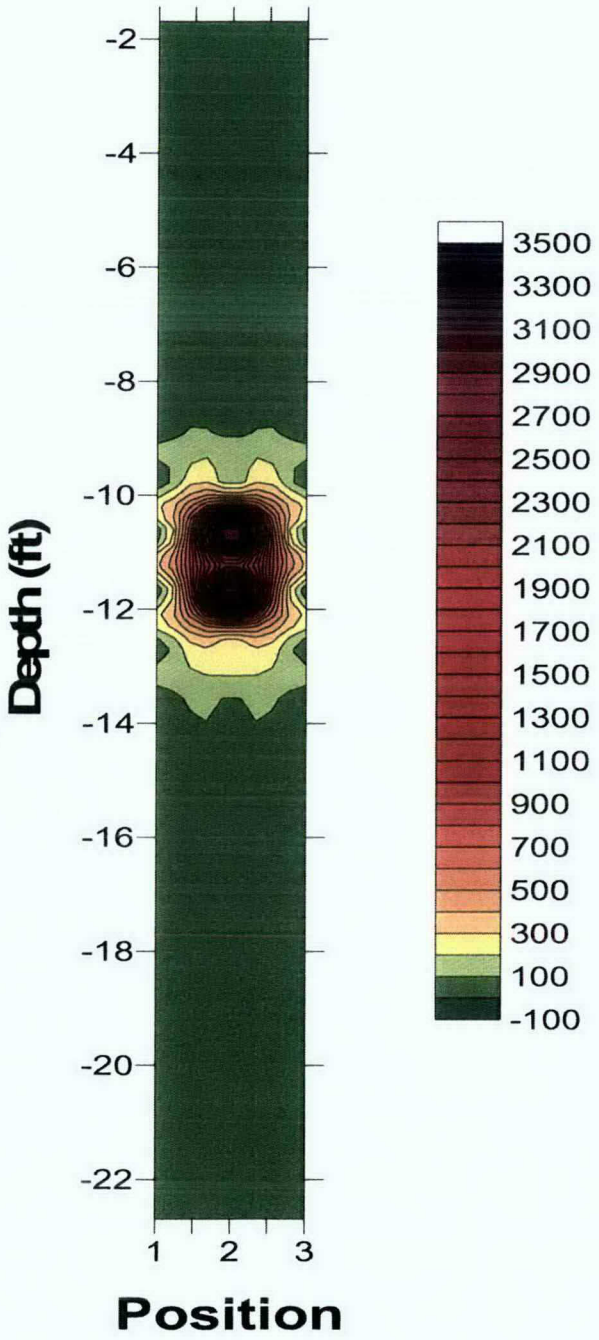


# MDP -2 VPU 44
## Gross Rate (mR/hr)

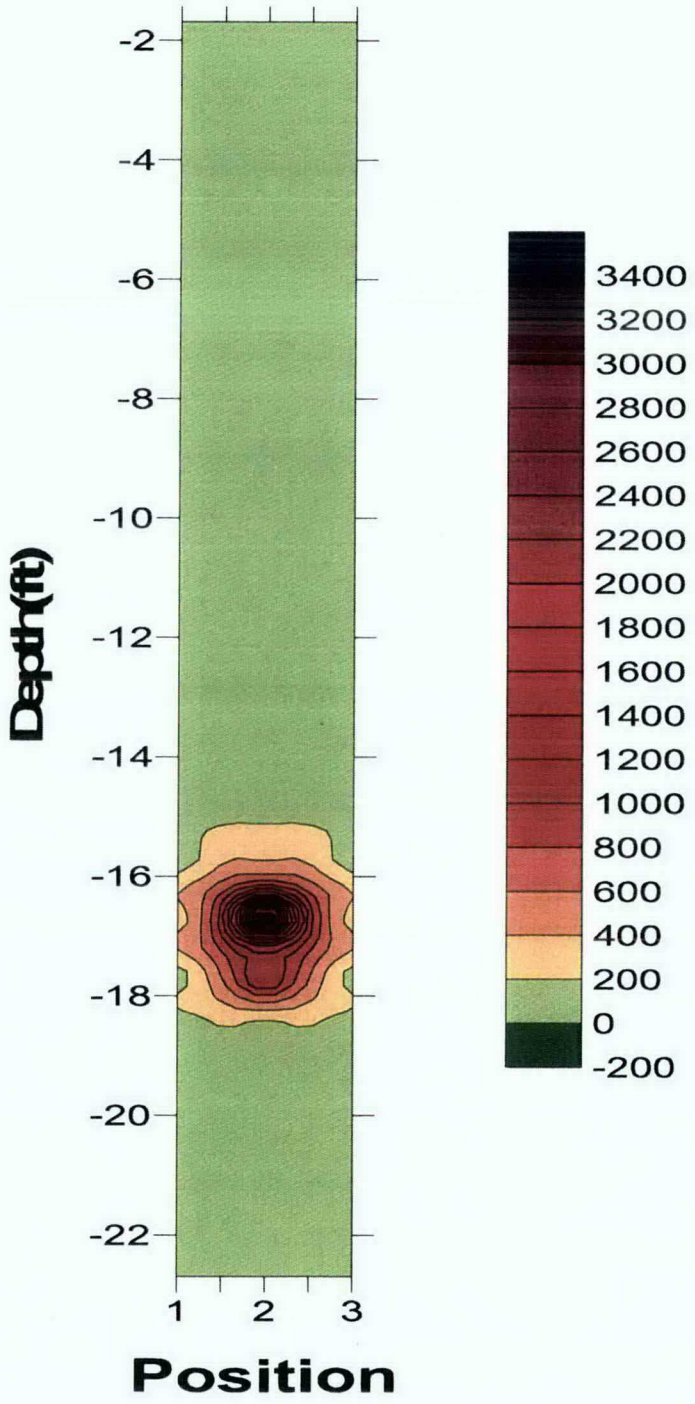



MDP -2 VPU 45
Gross Rate (mR/hr)
Depth (ft)
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
1
2
3
Position
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
-100

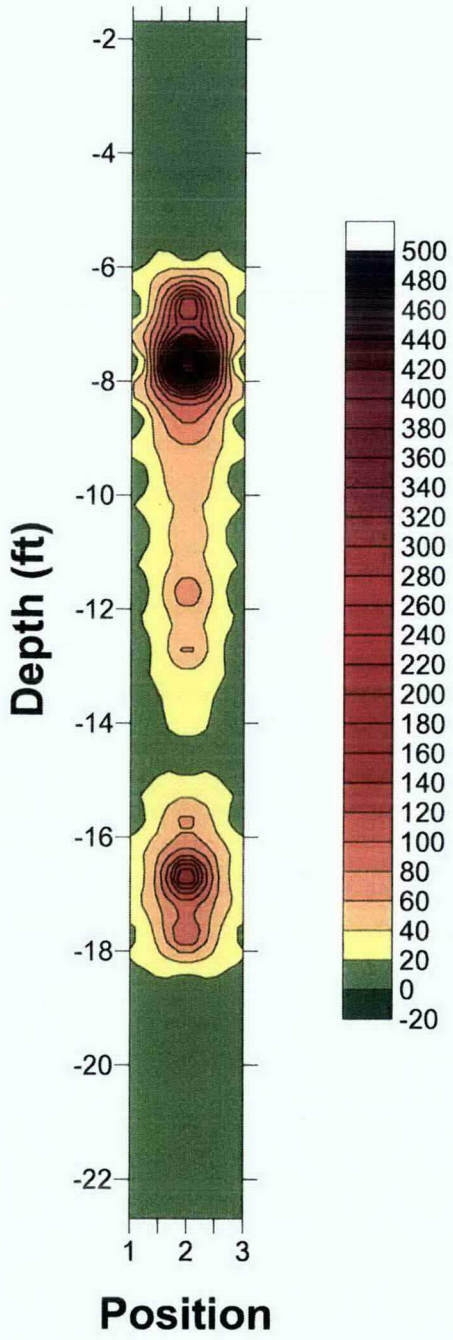
# MDP -2 VPU 46
## Gross Rate (mR/hr)



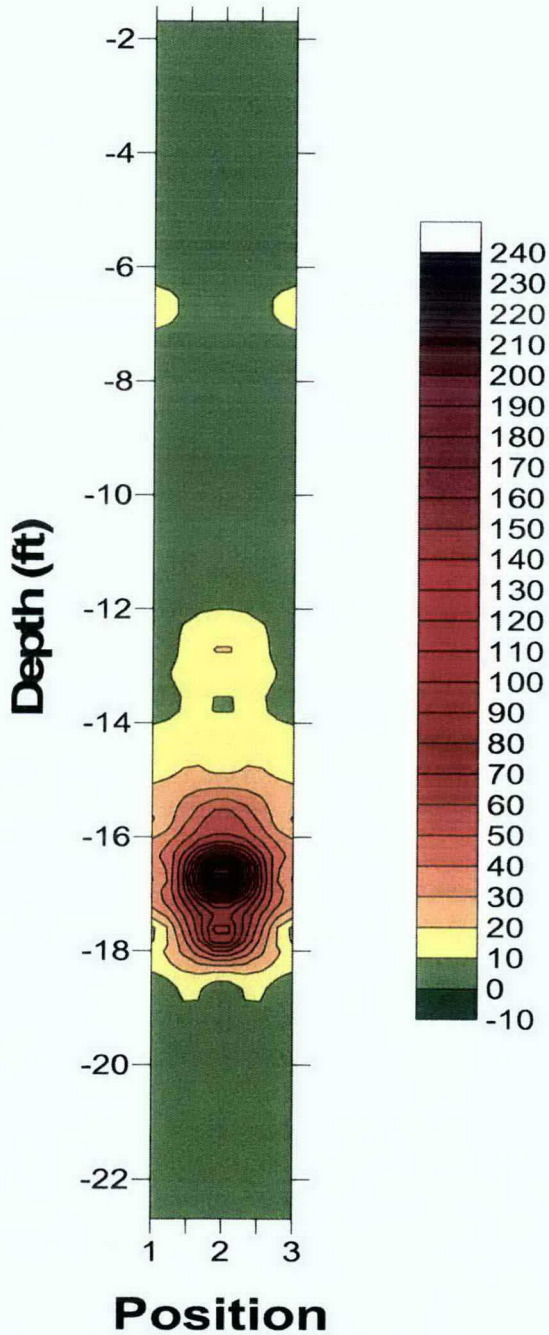
# MDP -2 VPU 47
# Gross Rate (mR/hr)



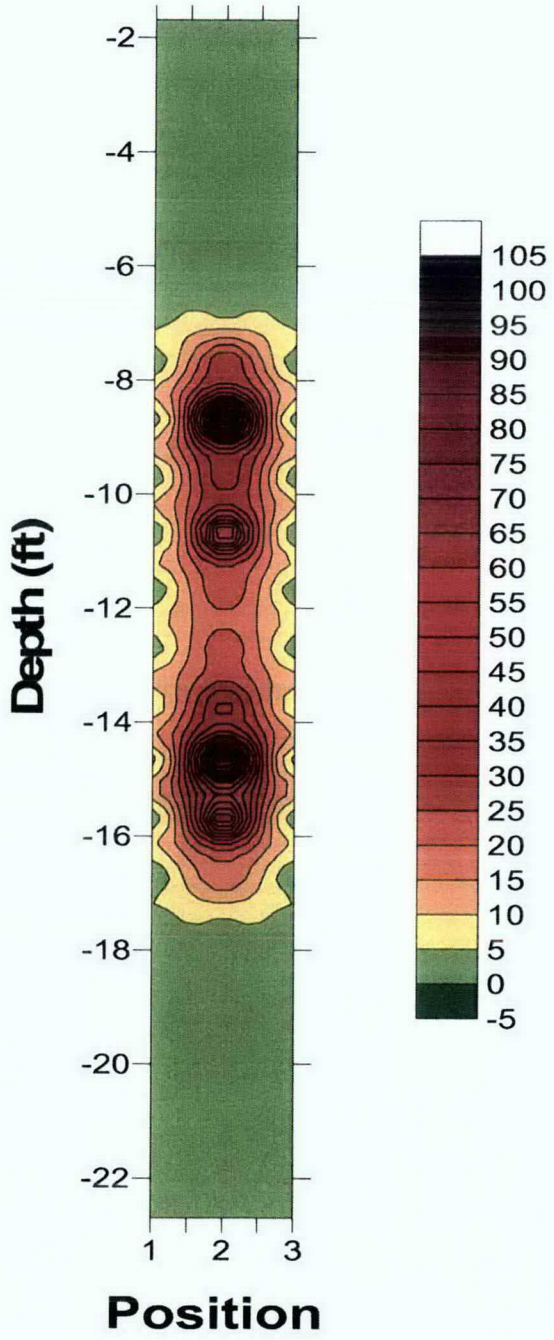
# MDP -2 48
# Gross Rate (mR/hr)



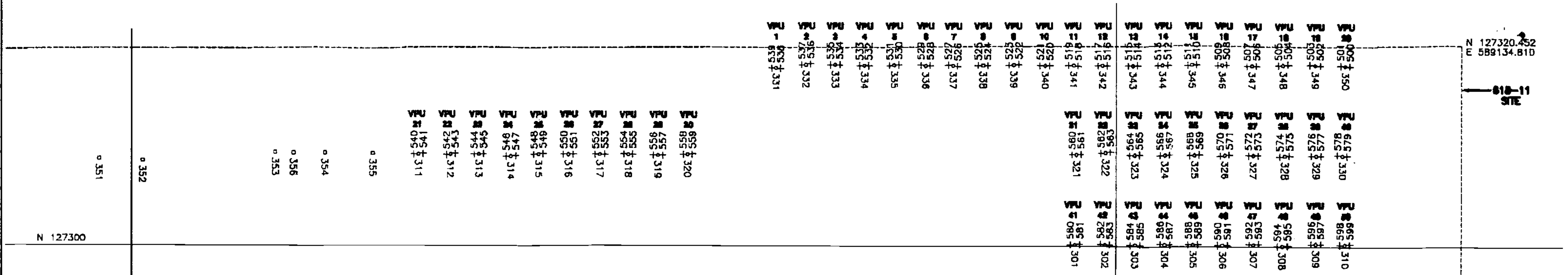
# MDP -2 VPU 49
## Gross Rate (mR/hr)



# MDP -2 VPU 50
# Gross Rate (mR/hr)



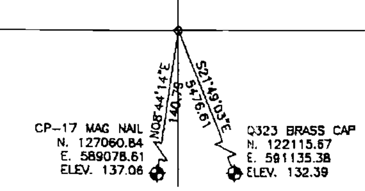
# Appendix D - 618-11 VPU As-Built Survey




| WEST CONE PENETROMETER POINT TABLE | | | | | |
|---|---|---|---|---|---|
| POINT # | VPU # | NORTHING | EASTING | ELEVATION | DEPTH |
| 539 | CL CAP 1-1 | 127318.15 | 589064.78 | 137.29 | 7.315 |
| 537 | CL CAP 2-1 | 127318.48 | 589067.93 | 137.28 | 7.315 |
| 535 | CL CAP 3-1 | 127318.46 | 589070.89 | 137.27 | 7.315 |
| 533 | CL CAP 4-1 | 127318.39 | 589073.87 | 137.28 | 7.315 |
| 531 | CL CAP 5-1 | 127318.40 | 589076.92 | 137.28 | 7.315 |
| 529 | CL CAP 6-1 | 127318.43 | 589080.13 | 137.26 | 7.315 |
| 527 | CL CAP 7-1 | 127318.45 | 589082.89 | 137.25 | 7.315 |
| 525 | CL CAP 8-1 | 127318.40 | 589085.89 | 137.26 | 7.315 |
| 523 | CL CAP 9-1 | 127318.42 | 589089.00 | 137.27 | 7.315 |
| 521 | CL CAP 10-1 | 127318.38 | 589092.13 | 137.28 | 7.315 |
| 519 | CL CAP 11-1 | 127318.42 | 589095.01 | 137.24 | 7.315 |
| 517 | CL CAP 12-1 | 127318.37 | 589098.09 | 137.24 | 7.315 |
| 515 | CL CAP 13-1 | 127318.38 | 589101.21 | 137.19 | 7.315 |
| 513 | CL CAP 14-1 | 127318.40 | 589104.23 | 137.16 | 7.315 |
| 511 | CL CAP 15-1 | 127318.41 | 589107.27 | 137.13 | 7.315 |
| 509 | CL CAP 16-1 | 127318.40 | 589110.35 | 137.13 | 7.315 |
| 507 | CL CAP 17-1 | 127318.38 | 589113.34 | 137.14 | 7.315 |
| 505 | CL CAP 18-1 | 127318.46 | 589116.46 | 137.15 | 7.315 |
| 503 | CL CAP 19-1 | 127318.53 | 589119.56 | 137.16 | 7.315 |
| 501 | CL CAP 20-1 | 127318.46 | 589122.61 | 137.13 | 7.315 |
| 540 | CL CAP 21-1 | 127309.32 | 589028.37 | 137.25 | 7.315 |
| 542 | CL CAP 22-1 | 127309.27 | 589031.69 | 137.24 | 7.315 |
| 544 | CL CAP 23-1 | 127309.33 | 589034.56 | 137.23 | 7.315 |
| 546 | CL CAP 24-1 | 127309.13 | 589037.80 | 137.17 | 7.315 |
| 548 | CL CAP 25-1 | 127309.33 | 589040.59 | 137.17 | 7.315 |
| 550 | CL CAP 26-1 | 127309.32 | 589043.64 | 137.20 | 7.315 |
| 552 | CL CAP 27-1 | 127309.33 | 589046.81 | 137.20 | 7.315 |
| 554 | CL CAP 28-1 | 127309.38 | 589049.72 | 137.21 | 7.315 |
| 556 | CL CAP 29-1 | 127309.25 | 589052.80 | 137.21 | 7.315 |
| 558 | CL CAP 30-1 | 127309.34 | 589055.81 | 137.20 | 7.315 |
| 560 | CL CAP 31-1 | 127309.33 | 589095.36 | 137.22 | 7.315 |
| 562 | CL CAP 32-1 | 127309.48 | 589098.40 | 137.20 | 7.315 |
| 564 | CL CAP 33-1 | 127309.25 | 589101.38 | 137.18 | 7.315 |
| 566 | CL CAP 34-1 | 127309.30 | 589104.45 | 137.18 | 7.315 |
| 568 | CL CAP 35-1 | 127309.26 | 589107.52 | 137.16 | 7.315 |
| 570 | CL CAP 36-1 | 127309.23 | 589110.59 | 137.18 | 7.315 |
| 572 | CL CAP 37-1 | 127309.32 | 589113.50 | 137.18 | 7.315 |
| 574 | CL CAP 38-1 | 127309.21 | 589116.63 | 137.14 | 7.315 |
| 576 | CL CAP 39-1 | 127309.28 | 589119.70 | 137.10 | 7.315 |
| 578 | CL CAP 40-1 | 127309.35 | 589122.32 | 137.09 | 7.315 |
| 580 | CL CAP 41-1 | 127300.18 | 589095.20 | 137.14 | 7.315 |
| 582 | CL CAP 42-1 | 127300.24 | 589098.38 | 137.12 | 7.315 |
| 584 | CL CAP 43-1 | 127300.13 | 589101.41 | 137.13 | 7.315 |
| 586 | CL CAP 44-1 | 127300.28 | 589104.46 | 137.14 | 7.315 |
| 588 | CL CAP 45-1 | 127300.21 | 589107.38 | 137.14 | 7.315 |
| 590 | CL CAP 46-1 | 127300.15 | 589110.37 | 137.13 | 7.315 |
| 592 | CL CAP 47-1 | 127300.27 | 589113.56 | 137.10 | 7.315 |
| 594 | CL CAP 48-1 | 127300.09 | 589116.41 | 137.07 | 7.315 |
| 596 | CL CAP 49-1 | 127300.32 | 589119.68 | 137.05 | 7.315 |
| 598 | CL CAP 50-1 | 127300.22 | 589122.58 | 137.07 | 7.315 |

| CENTERLINE VPU POINT TABLE | | | |
|---|---|---|---|
| POINT # | VPU # | NORTHING | EASTING |
| 331 | VPU 1 | 127318.18 | 589065.26 |
| 332 | VPU 2 | 127318.48 | 589068.39 |
| 333 | VPU 3 | 127318.49 | 589071.38 |
| 334 | VPU 4 | 127318.40 | 589074.34 |
| 335 | VPU 5 | 127318.44 | 589077.40 |
| 336 | VPU 6 | 127318.37 | 589080.62 |
| 337 | VPU 7 | 127318.39 | 589083.37 |
| 338 | VPU 8 | 127318.39 | 589086.37 |
| 339 | VPU 9 | 127318.44 | 589089.46 |
| 340 | VPU 10 | 127318.37 | 589092.62 |
| 341 | VPU 11 | 127318.39 | 589095.51 |
| 342 | VPU 12 | 127318.39 | 589098.54 |
| 343 | VPU 13 | 127318.37 | 589101.68 |
| 344 | VPU 14 | 127318.41 | 589104.71 |
| 345 | VPU 15 | 127318.45 | 589107.74 |
| 346 | VPU 16 | 127318.43 | 589110.78 |
| 347 | VPU 17 | 127318.41 | 589113.84 |
| 348 | VPU 18 | 127318.48 | 589116.93 |
| 349 | VPU 19 | 127318.49 | 589120.02 |
| 350 | VPU 20 | 127318.42 | 589123.06 |
| 311 | VPU 21 | 127309.33 | 589028.82 |
| 312 | VPU 22 | 127309.31 | 589032.13 |
| 313 | VPU 23 | 127309.33 | 589035.04 |
| 314 | VPU 24 | 127309.15 | 589038.27 |
| 315 | VPU 25 | 127309.35 | 589041.07 |
| 316 | VPU 26 | 127309.32 | 589044.10 |
| 317 | VPU 27 | 127309.33 | 589047.26 |
| 318 | VPU 28 | 127309.34 | 589050.22 |
| 319 | VPU 29 | 127309.26 | 589053.25 |
| 320 | VPU 30 | 127309.35 | 589056.25 |
| 321 | VPU 31 | 127309.32 | 589095.84 |
| 322 | VPU 32 | 127309.52 | 589098.87 |
| 323 | VPU 33 | 127309.30 | 589101.87 |
| 324 | VPU 34 | 127309.32 | 589104.92 |
| 325 | VPU 35 | 127309.30 | 589108.02 |
| 326 | VPU 36 | 127309.29 | 589111.08 |
| 327 | VPU 37 | 127309.31 | 589113.98 |
| 328 | VPU 38 | 127309.27 | 589117.11 |
| 329 | VPU 39 | 127309.30 | 589120.15 |
| 330 | VPU 40 | 127309.29 | 589122.79 |
| 301 | VPU 41 | 127300.17 | 589095.66 |
| 302 | VPU 42 | 127300.19 | 589098.82 |
| 303 | VPU 43 | 127300.17 | 589101.90 |
| 304 | VPU 44 | 127300.22 | 589104.91 |
| 305 | VPU 45 | 127300.20 | 589107.87 |
| 306 | VPU 46 | 127300.15 | 589110.84 |
| 307 | VPU 47 | 127300.24 | 589114.01 |
| 308 | VPU 48 | 127300.10 | 589116.87 |
| 309 | VPU 49 | 127300.31 | 589120.11 |
| 310 | VPU 50 | 127300.25 | 589123.06 |
| 351 | CAISSON | 127308.90 | 588996.72 |
| 352 | CAISSON | 127308.72 | 589001.07 |
| 353 | CAISSON | 127309.51 | 589014.47 |
| 354 | CAISSON | 127309.44 | 589019.42 |
| 355 | CAISSON | 127309.41 | 589024.29 |
| 356 | CAISSON | 127309.45 | 589016.29 |

| EAST CONE PENETROMETER POINT TABLE | | | | | |
|---|---|---|---|---|---|
| POINT # | VPU # | NORTHING | EASTING | ELEVATION | DEPTH |
| 538 | CL CAP 1-2 | 127318.13 | 589065.72 | 137.29 | 7.315 |
| 536 | CL CAP 2-2 | 127318.56 | 589068.85 | 137.27 | 7.315 |
| 534 | CL CAP 3-2 | 127318.48 | 589071.83 | 137.27 | 7.315 |
| 532 | CL CAP 4-2 | 127318.39 | 589074.76 | 137.28 | 7.315 |
| 530 | CL CAP 5-2 | 127318.46 | 589077.86 | 137.27 | 7.315 |
| 528 | CL CAP 6-2 | 127318.42 | 589081.07 | 137.26 | 7.315 |
| 526 | CL CAP 7-2 | 127318.33 | 589083.83 | 137.28 | 7.315 |
| 524 | CL CAP 8-2 | 127318.39 | 589086.84 | 137.26 | 7.315 |
| 522 | CL CAP 9-2 | 127318.47 | 589089.95 | 137.27 | 7.315 |
| 520 | CL CAP 10-2 | 127318.36 | 589093.08 | 137.26 | 7.315 |
| 518 | CL CAP 11-2 | 127318.35 | 589095.98 | 137.22 | 7.315 |
| 516 | CL CAP 12-2 | 127318.39 | 589099.01 | 137.20 | 7.315 |
| 514 | CL CAP 13-2 | 127318.42 | 589102.12 | 137.17 | 7.315 |
| 512 | CL CAP 14-2 | 127318.40 | 589105.22 | 137.15 | 7.315 |
| 510 | CL CAP 15-2 | 127318.47 | 589108.17 | 137.16 | 7.315 |
| 508 | CL CAP 16-2 | 127318.47 | 589111.22 | 137.14 | 7.315 |
| 506 | CL CAP 17-2 | 127318.41 | 589114.23 | 137.14 | 7.315 |
| 504 | CL CAP 18-2 | 127318.56 | 589117.33 | 137.15 | 7.315 |
| 502 | CL CAP 19-2 | 127318.47 | 589120.53 | 137.15 | 7.315 |
| 500 | CL CAP 20-2 | 127318.41 | 589123.55 | 137.13 | 7.315 |
| 541 | CL CAP 21-2 | 127309.38 | 589029.31 | 137.24 | 7.315 |
| 543 | CL CAP 22-2 | 127309.39 | 589032.61 | 137.24 | 7.315 |
| 545 | CL CAP 23-2 | 127309.35 | 589035.52 | 137.21 | 7.315 |
| 547 | CL CAP 24-2 | 127309.19 | 589038.76 | 137.17 | 7.315 |
| 549 | CL CAP 25-2 | 127309.38 | 589041.53 | 137.18 | 7.315 |
| 551 | CL CAP 26-2 | 127309.32 | 589044.59 | 137.19 | 7.315 |
| 553 | CL CAP 27-2 | 127309.35 | 589047.76 | 137.20 | 7.315 |
| 555 | CL CAP 28-2 | 127309.36 | 589050.69 | 137.21 | 7.315 |
| 557 | CL CAP 29-2 | 127309.26 | 589053.75 | 137.21 | 7.315 |
| 559 | CL CAP 30-2 | 127309.38 | 589056.74 | 137.19 | 7.315 |
| 561 | CL CAP 31-2 | 127309.36 | 589096.30 | 137.21 | 7.315 |
| 563 | CL CAP 32-2 | 127309.59 | 589099.35 | 137.21 | 7.315 |
| 565 | CL CAP 33-2 | 127309.34 | 589102.37 | 137.18 | 7.315 |
| 567 | CL CAP 34-2 | 127309.35 | 589105.33 | 137.16 | 7.315 |
| 569 | CL CAP 35-2 | 127309.34 | 589108.49 | 137.15 | 7.315 |
| 571 | CL CAP 36-2 | 127309.35 | 589111.53 | 137.17 | 7.315 |
| 573 | CL CAP 37-2 | 127309.32 | 589114.45 | 137.15 | 7.315 |
| 575 | CL CAP 38-2 | 127309.30 | 589117.55 | 137.12 | 7.315 |
| 577 | CL CAP 39-2 | 127309.29 | 589120.60 | 137.11 | 7.315 |
| 579 | CL CAP 40-2 | 127309.27 | 589123.28 | 137.06 | R |
| 581 | CL CAP 41-2 | 127300.21 | 589096.17 | 137.13 | 7.315 |
| 583 | CL CAP 42-2 | 127300.18 | 589099.30 | 137.14 | 7.315 |
| 585 | CL CAP 43-2 | 127300.16 | 589102.43 | 137.14 | 7.315 |
| 587 | CL CAP 44-2 | 127300.21 | 589105.41 | 137.14 | 7.315 |
| 589 | CL CAP 45-2 | 127300.23 | 589108.35 | 137.16 | 7.315 |
| 591 | CL CAP 46-2 | 127300.19 | 589111.36 | 137.11 | 7.315 |
| 593 | CL CAP 47-2 | 127300.31 | 589114.52 | 137.10 | 7.315 |
| 595 | CL CAP 48-2 | 127300.14 | 589117.38 | 137.04 | 7.315 |
| 597 | CL CAP 49-2 | 127300.32 | 589120.60 | 137.04 | 7.315 |
| 599 | CL CAP 50-2 | 127300.28 | 589123.56 | 137.07 | 7.315 |




## NOTES

(1) DATE SURVEYED: JUNE 21, 2011

(2) SURVEY: THIRD-ORDER, CLASS 1; 1:10000
WAC 332-130

(3) +XXX = CONE PENETROMETER POINT NUMBER

(4) ⊕XXX = CENTERLINE VPU POINT NUMBER

(5) ▫XXX = CAISSON POINT NUMBER

(6) R = THIS TUBE ABANDONED DUE TO PRESENCE OF INTERNAL CONTAMINATION

### HORIZONTAL DATUM

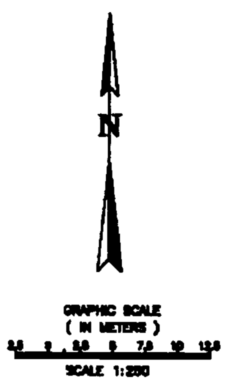
NAD83(91) WA SPC
SOUTH ZONE
(MTRS)

### VERTICAL DATUM

NAVD 88 (MTRS)

### SURVEYOR'S CERTIFICATION

I, CHRISTOPHER C. AMMANN, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF WASHINGTON, BASED ON MY KNOWLEDGE, INFORMATION AND BELIEF, HEREBY CERTIFY THAT THIS MAP IS THE RESULT OF A FIELD ASBUILT SURVEY CONDUCTED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THE COORDINATES AND ELEVATIONS ARE CORRECT AS SHOWN.




07/19/11 ASBUILT SURVEY

KERMIT SURVEYING INC

NORTH WIND, INC.
507 KNIGHT STREET
RICHLAND, WA 99352

DRAWING NO. 618-11-003-001 SHEET 1 OF 1

618-11 VPU ASBUILT SURVEY HANFORD, WASHINGTON