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Phase II Closure Sampling Report

Buildings 2009, 2009A, 2009B, 2009C, and 2009D

Defense Reutilization and Marketing Office

U.S. Naval Activity Puerto Rico

Ceiba, Puerto Rico

Prepared for

Department of the Navy
Naval Facilities Engineering Command
Atlantic

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Prepared by

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Contents

Section **Page**

Acronyms ..... **v**

1. Introduction **1-1**
- 1.1 Background 1-1
- 1.2 Description of Building 2009 and Former Buildings 2009A, 2009B, 2009C, and 2009D 1-5
- 1.3 Previous Closure Sampling and Analysis 1-5
- 1.4 Report Contents and Organization 1-8

2. Sampling and Analysis Activities **2-1**
- 2.1 Sampling and Analysis Objectives 2-1
- 2.2 Background Soil Sampling for Arsenic 2-2
- 2.3 Soil Delineation Sampling for TRPH 2-5
- 2.4 Management of Investigation Derived Waste 2-15

3. Soil Sampling Results **3-1**
- 3.1 Background Soil Arsenic Sampling Results 3-1
  - 3.1.1 Statistical Methodology and Results for Background Arsenic Data Evaluation 3-2
  - 3.1.2 Comparison of Building 2009 Area Arsenic Level to Background Level 3-7
- 3.2 TRPH Soil Sampling Results 3-12
  - 3.2.1 Statistical Methodology and Results for TRPH Data Evaluation 3-12
- 3.3 Data Validation and Quality Evaluation 3-17

4. Conclusions and Recommendations **4-1**
- 4.1 Conclusions 4-1
- 4.2 Recommendations 4-1

5. References **5-1**

Appendixes

A: Laboratory Analytical Data
B: Data Validation Report
C: Data Quality Evaluation

List of Exhibits

Number		Page
1-1	Regional Location Map	1-2
1-2	NAPR Building Location Map	1-3
1-3	DRMO Facility Layout	1-4
1-4	DRMO Building 2009 Area	1-6
1-5	Previous Closure Sampling Results for Arsenic and TRPH (DRO)	1-7
2-1	Existing Background Soil Sampling Concentrations for Arsenic	2-2
2-2	Previous Background Sample Locations for Arsenic	2-3
2-3	Location of Buildings for Additional Soil Background Arsenic Sampling	2-4
2-4	Building Information	2-5
2-5	New Background Sample Locations – Building 3134	2-6
2-6	New Background Sample Locations – Building 3098	2-7
2-7	New Background Sample Locations – Building 3082	2-8
2-8	New Background Sample Locations – Building 1759	2-9
2-9	New Background Sample Locations – Building 1728	2-10
2-10	Soil Arsenic Concentrations in Building 2009 Area	2-11
2-11	Previous Soil TRPH Concentrations in Building 2009 Area	2-13
2-12	New TRPH Delineation Sample Locations in Building 2009 Area	2-14
3-1	Background Soil Arsenic Sample Results	3-1
3-2	Example Box-and-Whisker Plots	3-5
3-3	Box-and-Whisker Plot for Arsenic Data Sets - Background and Building 2009 Site Soil Arsenic Concentrations	3-6
3-4	Background Soil Arsenic Limit Calculations	3-8
3-5	Soil Arsenic Concentrations in DRMO Building 2009 Area	3-9
3-6	Statistical Evaluation of Building 2009 Area Soil Arsenic Concentrations	3-11
3-7	TRPH Soil Sampling Results in DRMO Building 2009 Area	3-13
3-8	Statistical Evaluation of Building 2009 Area Soil TRPH Concentrations	3-16

Acronyms

CI	Confidence interval
COC	Chain of Custody
CTO	Contract Task Order
DQE	Data quality evaluation
DQO	Data quality objectives
DRMO	Defense Reutilization and Marketing Office
DRO	Diesel Range Organics
DV	Data validation
EDD	Electronic data deliverable
EQB	Puerto Rico Environmental Quality Board
FACLANT	Naval Facilities Engineering Command, Atlantic
ft	Foot/feet
GRO	Gasoline Range Organics
IDW	Investigation-derived waste
IQR	Interquartile range
JV I	AGVIQ-CH2M HILL Joint Venture I
MCL	Maximum contaminant level
MDL	Method detection limit
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MS/MSD	Matrix spike/matrix spike duplicate
MSL	Mean sea level
NAPR	Naval Activity Puerto Rico
NFESC	Naval Facilities Engineering Support Center
NSRR	Naval Station Roosevelt Roads
NTR	Navy Technical Representative
OVM	Organic vapor meter
PAH	Polycyclic aromatic hydrocarbons
PARCC	Precision, accuracy, representativeness, comparability, and completeness
PPE	Personal protective equipment
QA/QC	Quality assurance/quality control

RBC	Risk-based concentration
RCRA	Resource Conservation and Recovery Act
RL	Reporting limit
SAP	Sampling and Analysis Plan
sf	Square feet
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TRPH (GRO)	Total Recoverable Petroleum Hydrocarbons (Gasoline Range Organics)
TRPH (DRO)	Total Recoverable Petroleum Hydrocarbons (Diesel Range Organics)
UCI	Upper confidence interval
UCL	Upper confidence limit
UTL	Upper tolerance limit
VOC	Volatile organic compound

SECTION 1

Introduction

This report documents the Phase II closure sampling and analysis activities in support of clean closure of Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D at the Defense Reutilization and Marketing Office (DRMO) facility at U.S. Naval Activity Puerto Rico (NAPR), formerly U.S. Naval Station Roosevelt Roads (NSRR), Puerto Rico. The Phase II closure investigation was performed as a follow-up to the initial closure investigation conducted in 2005.

The Phase II closure sampling and analysis activities were conducted by AGVIQ-CH2M HILL Joint Venture I (JV I) primarily in accordance with the *Phase II Closure Sampling and Analysis Plan, Buildings 2009, 2009A, 2009B, 2009C, and 2009D, Defense Reutilization and Marketing Office, Naval Activity Puerto Rico, Ceiba, Puerto Rico* (JV I, 2006a), as approved by the U.S. Environmental Protection Agency (EPA) Region 2 and the Puerto Rico Environmental Quality Board (EQB). These activities were also conducted in accordance with the:

- Closure Plan in the Resource Conservation and Recovery Act (RCRA) Part B Permit for NAPR.
- Scope of Work provided by Naval Facilities Engineering Command, Atlantic (FACLANT) as part of the Navy Contract with JV I (N62470-03-D-4401), Contract Task Order (CTO) 25.

The closure requirements for Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D are based on the expected future industrial use of the property, and implementation of the appropriate institutional controls (i.e., deed restriction to preclude future residential or similar unrestricted use of the property).

1.1 Background

NAPR was commissioned in 1943 as a Naval Operations Base and re-designated as a Naval Station in 1957. It occupies more than 33,500 acres on the northern side of the eastern coast of Puerto Rico, along the Vieques Passage. The primary mission of NAPR was to provide support for Atlantic Fleet weapons training and development activities (Baker Environmental, Inc., 1996). The closure of NAPR was approved by Congress in September 2003; closure is expected to be completed in 2007.

Exhibit 1-1 shows the location of NAPR on the main island of Puerto Rico. NAPR is located approximately 35 miles east of San Juan, 10 miles south of Fajardo, and 10 miles west of Vieques Island. Exhibit 1-2 shows the location of the DRMO in the northeast section of NAPR. Exhibit 1-3 shows the layout of the DRMO facility area. The DRMO facility consists of an administrative/hazardous waste storage building (Building 1973), a large metal building used for non-hazardous waste storage (Building 2010), a flammable storage building (Building 2009), and a large open fenced area where surplus material (non-hazardous) was stored. Prior to June 2005, four portable flammable material storage buildings (Buildings 2009A, 2009B, 2009C, and 2009D) were located adjacent to Building 2009. These buildings were demolished and disposed of offsite.

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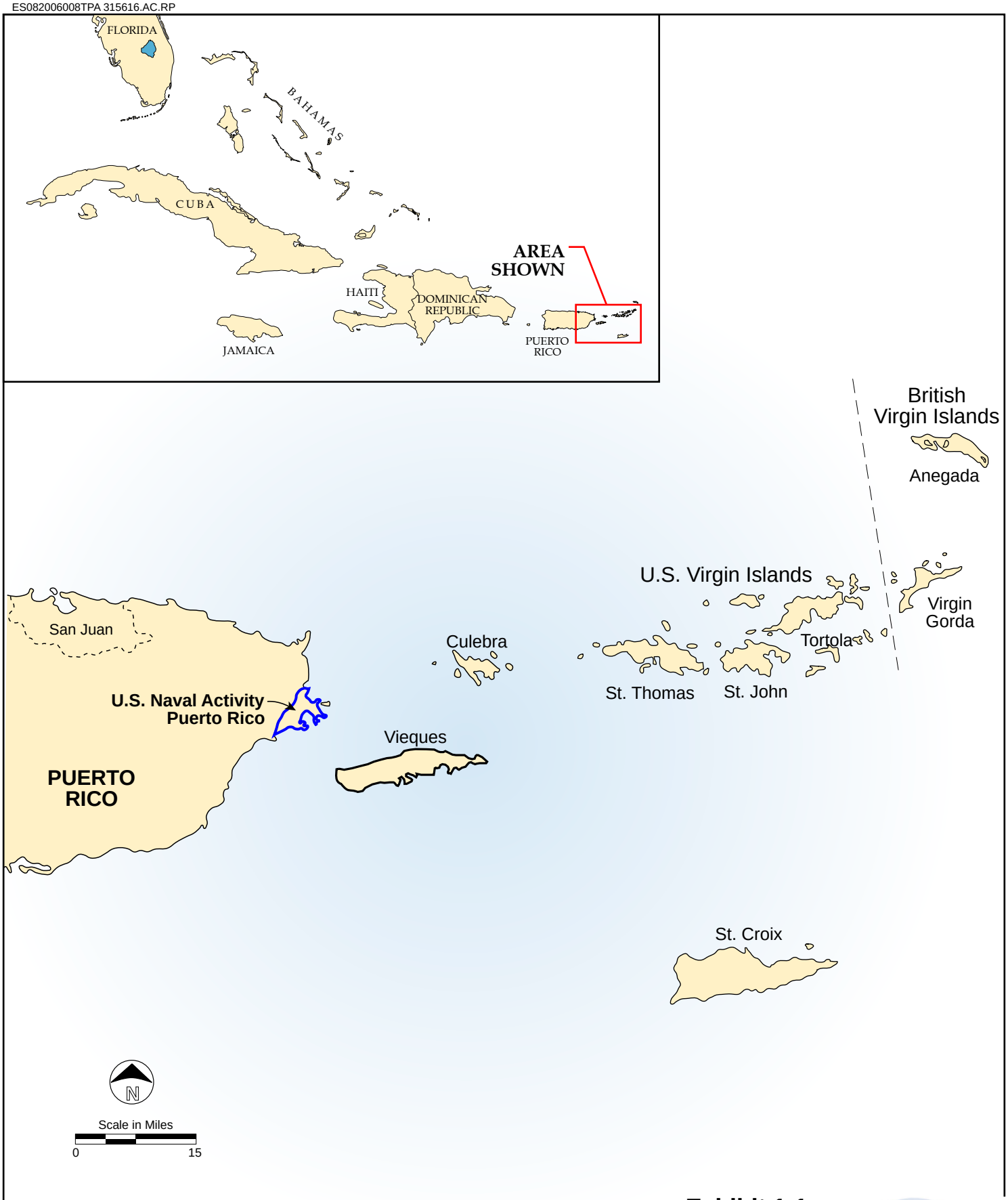

Exhibit 1-1
Regional Location Map
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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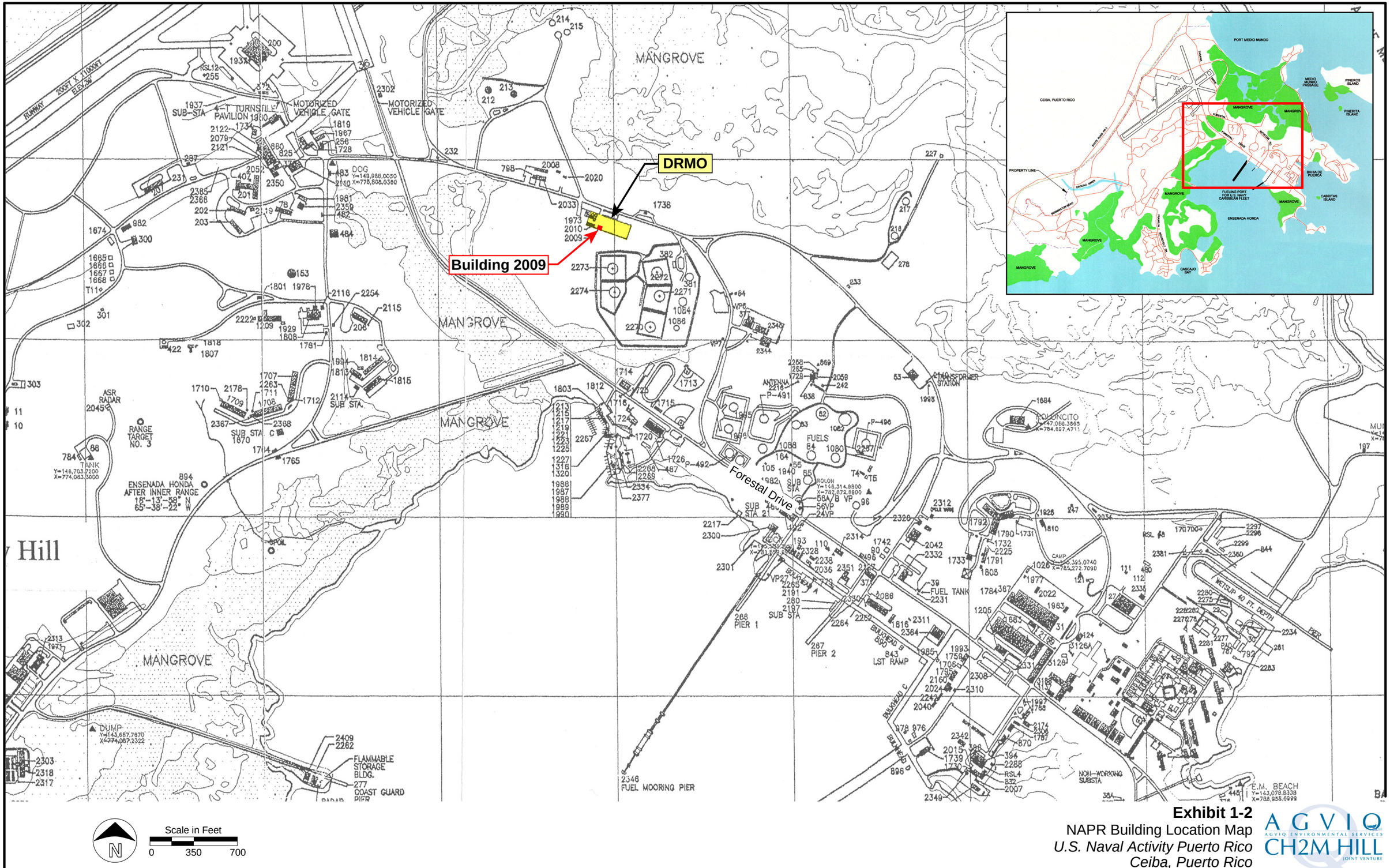

Exhibit 1-2
NAPR Building Location Map
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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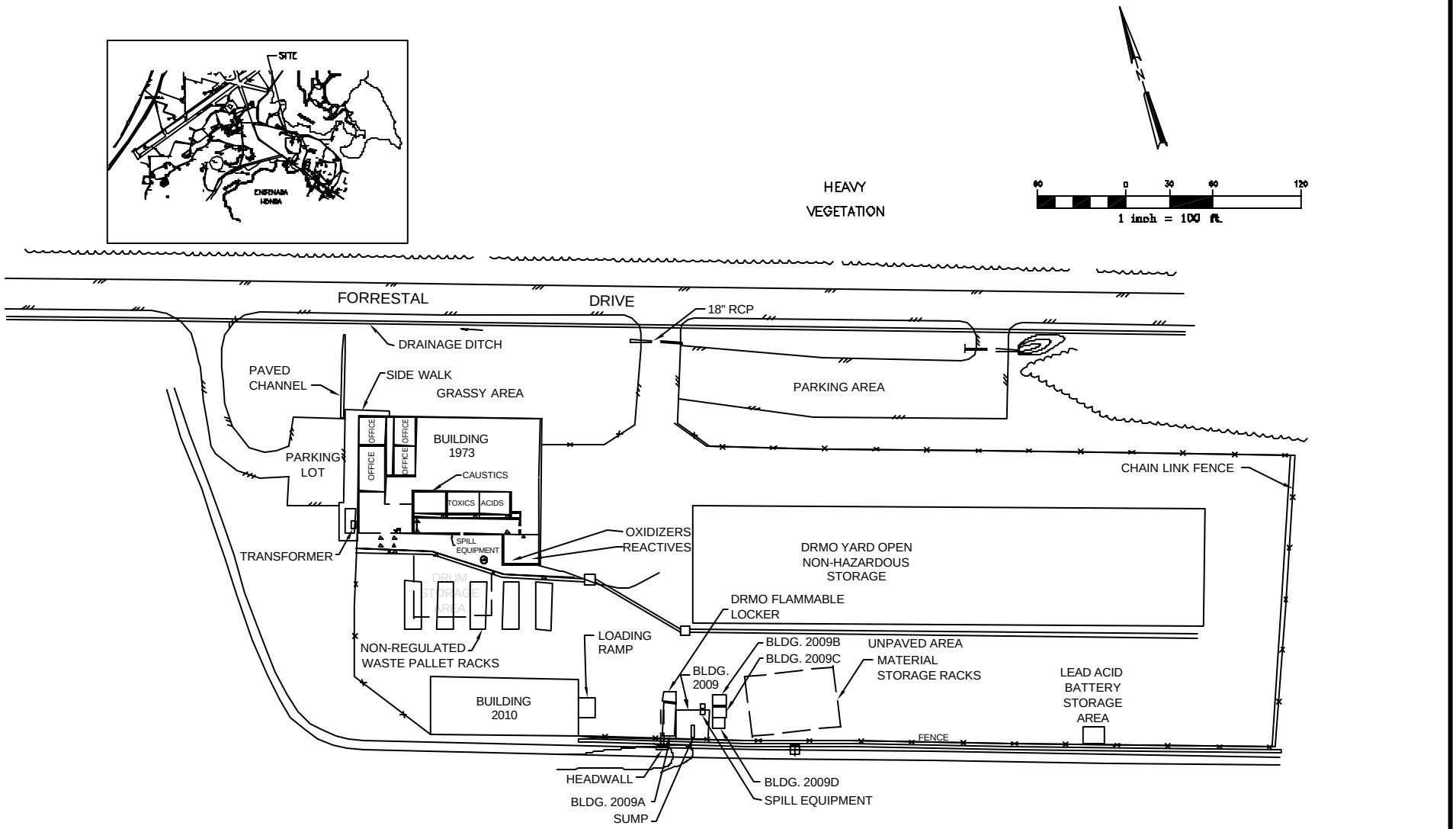

Exhibit 1-3
DRMO Facility Layout
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

Source: Baker Environmental, 1995.

1.2 Description of Building 2009 and Former Buildings 2009A, 2009B, 2009C, and 2009D

Building 2009 was constructed in the early 1980s as part of the DRMO. No reportable spills occurred in Building 2009, and small releases were contained and promptly cleaned up. Building 2009 consists of a one-story building constructed with a concrete slab floor and corrugated metal walls. Exhibit 1-4 provides a site plan of Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D. As shown, Building 2009 contains a sump in the center with drum storage space against the interior walls. Building 2009 occupies 360 square feet (sf) in one continuous open area. The building was constructed and designated for the storage of flammable hazardous wastes in containers. The structure conforms to the standards required for storage of hazardous wastes in containers. The building is equipped with a spill containment structure consisting of concrete curbing around its perimeter and a floor sump, covered by a steel grate. The floor in the building slopes toward the sump so that any spills or leaks are collected in the sump. The sump is fully contained with no outlet pipes. The floor and sump are coated with an epoxy sealant to protect the concrete surface. Expansion joints were constructed in the floor slab to minimize cracking and the floor joints have been filled with a weatherproofing epoxy sealant. The floor joints are not evident as they are covered with the epoxy coating.

Former Building 2009A was a prefabricated portable storage building constructed of heavy gauge steel. The building was located on concrete pavement adjacent to the western side of Building 2009, as shown in Exhibit 1-4. The floor of the structure consisted of metal grating equipped with secondary containment beneath the grating. Building 2009A was approximately 198 sf in size, separated into two compartments (132 sf at the north end, and 66 sf at the south end) with three exterior doors on the western side of the building. Former Building 2009A was decontaminated, demolished, and disposed of as part of previous closure activities. The demolished building was disposed of in the NAPR landfill during the week of June 20, 2005. The area where former Building 2009A was located now consists of an open area paved with concrete.

Former Buildings 2009B, 2009C, and 2009D were prefabricated portable storage buildings constructed of heavy gauge steel. The buildings were located on concrete supports adjacent to the eastern side of Building 2009 and were surrounded by unpaved gravel areas with patches of grass. Former Buildings 2009B, 2009C, and 2009D were each 67 sf in size with one exterior door on one side of each building. Each of these former buildings was decontaminated, demolished, and disposed of as part of previous closure activities. The demolished buildings were disposed of in the Fajardo Municipal Landfill (Class I) on March 15, 2005. The area where former Buildings 2009B, 2009C, and 2009D were located now consists of a relatively flat open area covered with gravel and sparse grass vegetation.

1.3 Previous Closure Sampling and Analysis

In 2005, Buildings 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D were decontaminated and the initial closure sampling and analysis activities were completed.

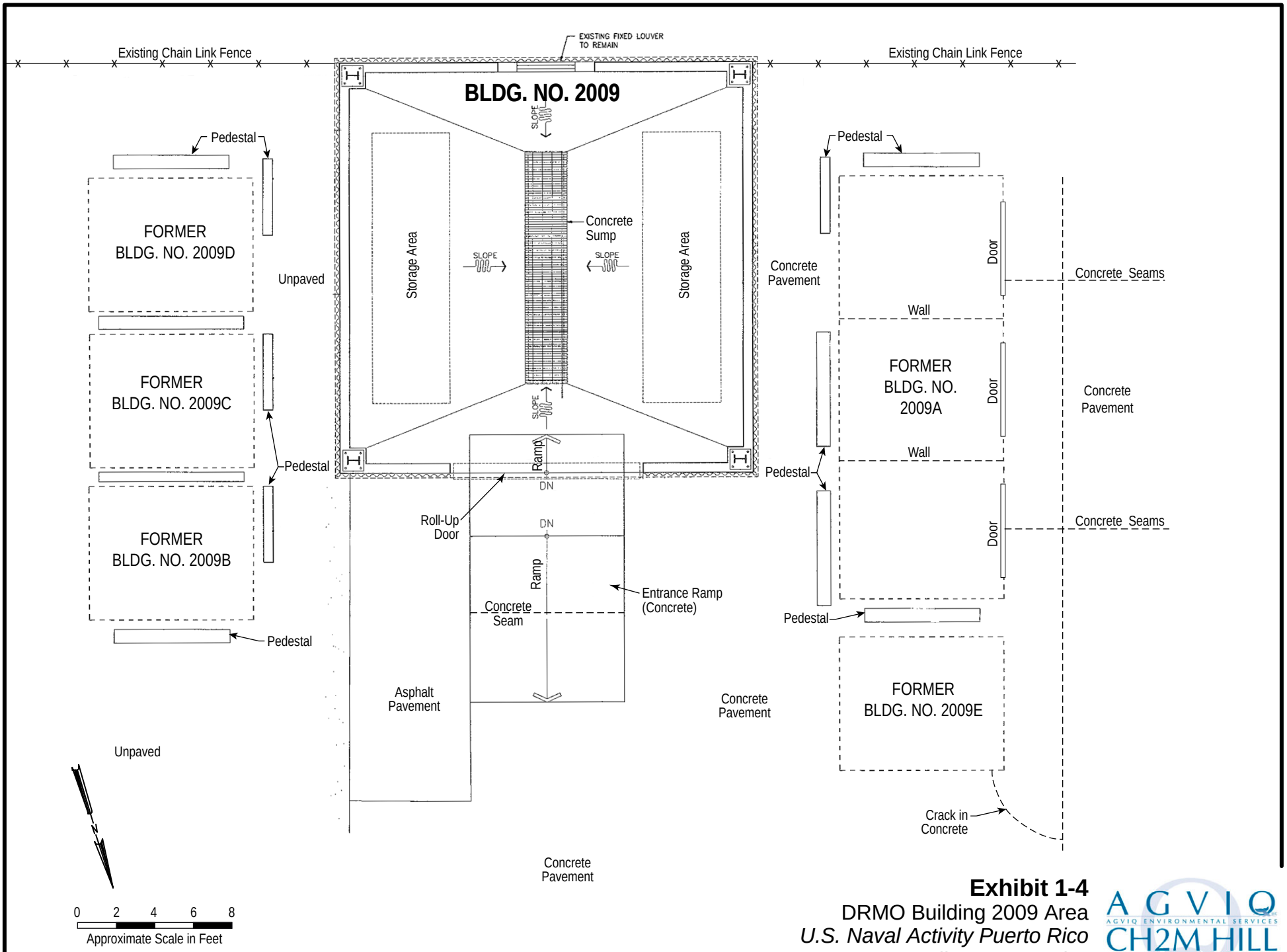

Exhibit 1-4
DRMO Building 2009 Area
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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As described previously, former Buildings 2009A, 2009B, 2009C, and 2009D were also demolished and disposed of during the initial closure activities.

The previous closure sampling and analysis activities were conducted as three separate investigations:

- Building 2009: Included the collection of 21 native soil samples (excluding quality control [QC] samples)
- Building 2009A: Included the collection of 11 native soil samples (excluding QC samples)
- Building 2009B, 2009C, and 2009D: Included the collection of 18 native soil samples (excluding QC samples)

The sampling and analysis results for the 2005 closure investigation of Buildings 2009, 2009A, 2009B, 2009C, and 2009D indicated that arsenic was detected at levels above its closure standard in all three areas of investigation. The 2005 closure sampling results also indicated that total recoverable petroleum hydrocarbons (TRPH) diesel range organics (DRO) were detected at levels above their closure standard, but only in the vicinity of Building 2009. Exhibit 1-5 shows the 95% upper confidence intervals (UCI) for arsenic and TRPH (DRO) relative to their respective closure standards.

EXHIBIT 1-5
Previous Closure Sampling Results for Arsenic and TRPH (DRO)
U.S. Naval Activity Puerto Rico

Building	95% UCI for Arsenic	Previous Background Concentration for Arsenic	EPA Region 3 RBC for Arsenic	Closure Standard Exceeded	95% UCI for TRPH (DRO)	TRPH (DRO) Closure Standard	Closure Standard Exceeded
2009	24.4	2.5	1.91	Yes	230	100	Yes
2009A	5.67	2.5	1.91	Yes	55.2	100	No
2009B,C,D	12.6	2.5	1.91	Yes	46.2	100	No

Notes:
All results presented in milligrams per kilogram (mg/kg).
Region 3 RBC = EPA Region 3 Risk Based Concentration for industrial soils (April 7, 2005)

TRPH (DRO) closure standard of 100 mg/kg from *Commonwealth Government of Puerto Rico, Office of the Governor, Environmental Quality Board, Water Quality Area* (November 7, 1990, Amendments 2002)

In addition, the 2005 closure sampling results indicated that both arsenic and TRPH were detected in the concrete samples collected from the floor of Building 2009 at levels exceeding their respective closure standards.

These sampling and analysis results were presented in the following reports:

- *Closure Sampling Report, Building 2009, Defense Reutilization and Marketing Office, U.S. Naval Activity Puerto Rico* (JV I, 2005a)
- *Closure Sampling Report, Building 2009A, Defense Reutilization and Marketing Office, U.S. Naval Activity Puerto Rico* (JV I, 2005b)

- *Closure Sampling Report, Buildings 2009B, 2009C, and 2009D, Defense Reutilization and Marketing Office, U.S. Naval Activity Puerto Rico* (JV I, 2005c)

EPA and the Puerto Rico Environmental Quality Board (EQB) submitted comments dated September 27, 2005, on the above-referenced Closure Sampling Reports. The comments included the following:

- Approval of the recommendation included in the reports to conduct additional background soil sampling to establish a new background arsenic concentration that is more representative of either natural conditions or non-waste-related anthropogenic activities at NAPR.
- Requirements to conduct additional soil sampling in the vicinity of Building 2009 to more fully delineate the nature and extent of the elevated TRPH (DRO) levels.
- Approval of the recommendation to perform a site-specific risk assessment of the approximate 0.25-acre area that encompasses Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D to address the arsenic-impacted and TRPH (DRO)-impacted soils, if appropriate following determination of the new soil background arsenic level and the full nature and extent of elevated TRPH (DRO) levels. The risk assessment will also address the arsenic and TRPH (DRO) detected in the concrete floor samples collected in Building 2009.

The above-referenced Closure Sampling Reports were revised in accordance with the EPA and EQB comments, and these final reports (dated November 2005) were submitted to EPA and EQB in early December 2005. These reports contained background and historical information on NAPR, as well as for Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D. They also contained information on the types of waste stored in these buildings in the past, and describe the current conditions of the buildings and surrounding area.

1.4 Report Contents and Organization

This Phase II Closure Sampling Report presents the results of the Phase II closure sampling and analysis activities conducted to establish the new background soil arsenic level, and to delineate the TRPH-impacted soil in the vicinity of Building 2009. This report also presents:

- An analysis of the previous soil sampling data for arsenic for the Building 2009 area (including the area of former Buildings 2009A, 2009B, 2009C, and 2009D) relative to the new background soil arsenic level (as the closure standard for arsenic)
- An analysis of the combined data set of the previous and new TRPH (DRO) sampling data for the Building 2009 area relative to the TRPH closure standard of 100 mg/kg
- Conclusions drawn from the analyses of the arsenic and TRPH (DRO) data
- Recommendations regarding the need to conduct a site-specific risk assessment, if appropriate

As with the initial closure sampling activities, the Phase II closure sampling and analysis activities were performed in support of clean closure of the hazardous waste storage facility

at DRMO at NAPR. The clean closure is based on the expected future industrial use of the property, and implementation of appropriate land use controls consistent with the requirements of the pending 7003 Administrative Order on Consent from the EPA (i.e., restriction to preclude future residential or similar use of the property).

The remaining sections of this report are organized as follows:

- **Section 2, Sampling and Analysis Activities –** Describes the sampling and analysis objectives to support clean closure, and the Phase II closure sampling and analysis activities.
- **Section 3, Soil Sampling Results** - Presents the results of the additional background arsenic soil sampling and TRPH (DRO) soil delineation sampling, and presents the results of the statistical analyses of the arsenic and TRPH (DRO) soil sampling data relative to the closure standards. This section also describes the sampling data validation and quality evaluation.
- **Section 4, Conclusions and Recommendations –** Presents the conclusions drawn from the statistical analysis of the arsenic and TRPH (DRO) data relative to their respective closure standards. Recommendations relative to the need to perform a site-specific risk assessment to address possible exceedances of closure standards are also presented.
- **Section 5, References –** Lists documents cited in this report.

SECTION 2

Sampling and Analysis Activities

2.1 Sampling and Analysis Objectives

The objectives of the sampling and analysis conducted in support of the clean closure of the approximate 0.25-acre area encompassing DRMO Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D were to:

- Determine a soil background concentration for arsenic that is more representative of either natural conditions, or non-waste-related, anthropogenic activities. The new arsenic background concentration will then be used to evaluate arsenic concentrations detected in the previously collected soil samples directly below and surrounding Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D.
- Delineate the elevated TRPH (DRO) concentration in the vicinity of previous sample locations SB4, SB8, and SB10 in the vicinity of Building 2009.

Once the new arsenic background level is established for site soils, all of the soil sampling data for Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D will be evaluated together for compliance with the closure standard (background level or EPA Region 3 RBC, whichever is higher) using the statistical analysis methodology described in Section 3. Should the arsenic level in the soil exceed background or the EPA Region 3 RBC for arsenic (whichever is higher), then the planned site-specific risk assessment for the approximate 0.25-acre area that encompasses Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D will be performed to determine whether the arsenic-impacted soils present an unacceptable risk to human health based on future industrial use of the site.

However, if the arsenic level in the soil does not exceed the new background arsenic level or the EPA Region 3 RBC for arsenic of 1.91 milligrams per kilogram (mg/kg), whichever is higher, then the clean closure standard for arsenic has been achieved, and a risk assessment will not be warranted.

Similarly, once the full extent of the TRPH-impacted soils in the vicinity of Building 2009 is assessed, the soil sampling data for Building 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D will be evaluated together for compliance with the TRPH closure standard of 100 mg/kg. This evaluation will be conducted using the statistical analysis methodology described in Section 3. Should the TRPH level (as determined from the statistical analysis of the new larger data set) in the soil exceed the closure standard of 100 mg/kg, then the planned site-specific risk assessment for the approximate 0.25-acre area that encompasses Building 2009, and former Buildings 2009A, 2009B, 2009C, and 2009D will be performed to determine whether the TRPH-impacted soils present an unacceptable risk to human health based on future industrial use of the site.

However, if the TRPH level in the soil does not exceed the 100 mg/Kg closure standard, then the clean closure standard for TRPH has been achieved, and a risk assessment will not be warranted.

The following sections describe the specific sampling and analysis activities performed to meet the objectives presented previously relative to development of a new background soil arsenic level, and further delineation sampling for TRPH in the vicinity of Building 2009.

2.2 Background Soil Sampling for Arsenic

To determine a soil background concentration for arsenic that is more representative of either natural conditions or non-waste-related anthropogenic activities, 24 additional soil background samples were collected from around other buildings at NAPR that are of similar construction and at least as old as Building 2009, but with no prior history of waste management activity. The samples were analyzed for arsenic.

To determine the new background arsenic concentration for soil, the previously used background soil data for arsenic included in the previous Closure Sampling Reports for Buildings 2009, 2009A, 2009B, 2009C, and 2009D were combined with the additional background soil concentrations for arsenic, and statistically analyzed to establish the new background arsenic level. Exhibit 2-1 presents the background arsenic soil concentration data used in the previous Closure Sampling Reports.

EXHIBIT 2-1
Existing Background Soil Sampling Concentrations for Arsenic
U.S. Naval Activity Puerto Rico

Inorganic Constituent	SW-846 Analytical Method	Background Soil Sample Concentrations (mg/kg)					
		9BGSS01	9BGSS01D	9BGSS02	9BGSS03	9BGSS04	9BGSS05
Arsenic	6010B	2.2	0.8	2.5	2.3	2.1	0.21

Notes:
mg/kg = milligrams per kilogram

As described in the previous Closure Sampling Reports for Buildings 2009, 2009A, 2009B, 2009C, and 2009D, the background soil sampling data came from the final *Corrective Measures Study Investigation Report for SWMU 9* (Baker Environmental, Inc., 2003). These background data included analytical results for RCRA Appendix IX inorganic parameters for surface soil samples (sampling depth of 0 to 6 inches) collected from five different locations. A duplicate sample was collected from one of the five background sampling locations. These sampling locations, which are shown in Exhibit 2-2, are at a sufficient distance from both the Solid Waste Management Unit (SWMU) 9 and the DRMO facility to avoid potential impacts from SWMU 9 and the DRMO facility. The 24 new arsenic background soil samples were collected from around five separate buildings at NAPR:

- Building 3134 – Four surface soil samples
- Building 3098 – Three surface soil samples
- Building 3084 – Five surface soil samples
- Building 1759 – Six surface soil samples
- Building 1728 – Six surface soil samples

Exhibit 2-3 shows the locations of these buildings within NAPR, and Exhibit 2-4 provides information on the date of construction, square footage, and historical usage of each building along with Building 2009.

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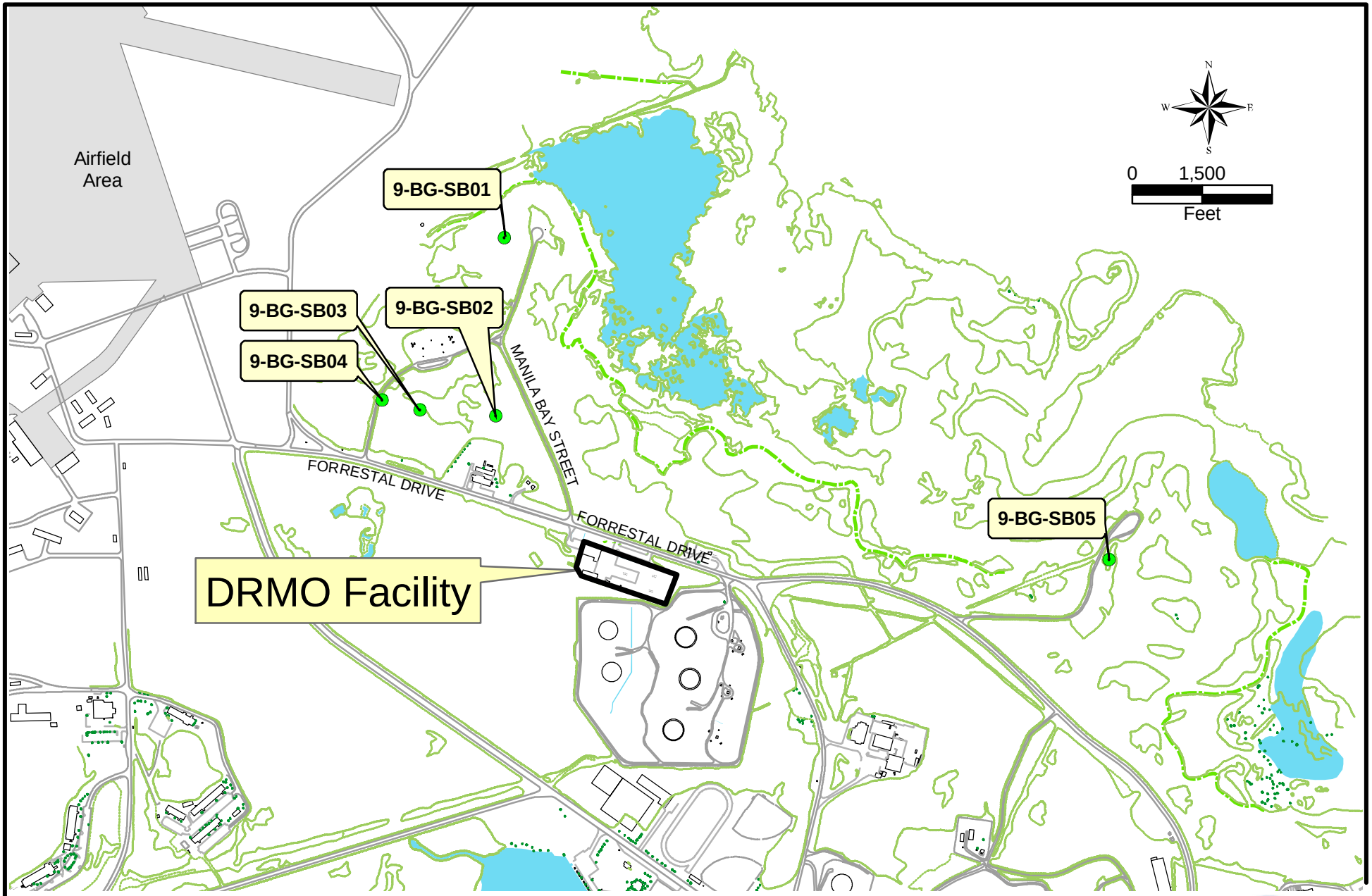

Legend

- Background Soil Sample Location
- Vegetation
- Trees
- Streams
- Roads
- Fence
- Water
- Airfield Area

Exhibit 2-2

Previous Background Sample Locations for Arsenic

U.S. Naval Activity Puerto Rico

Ceiba, Puerto Rico

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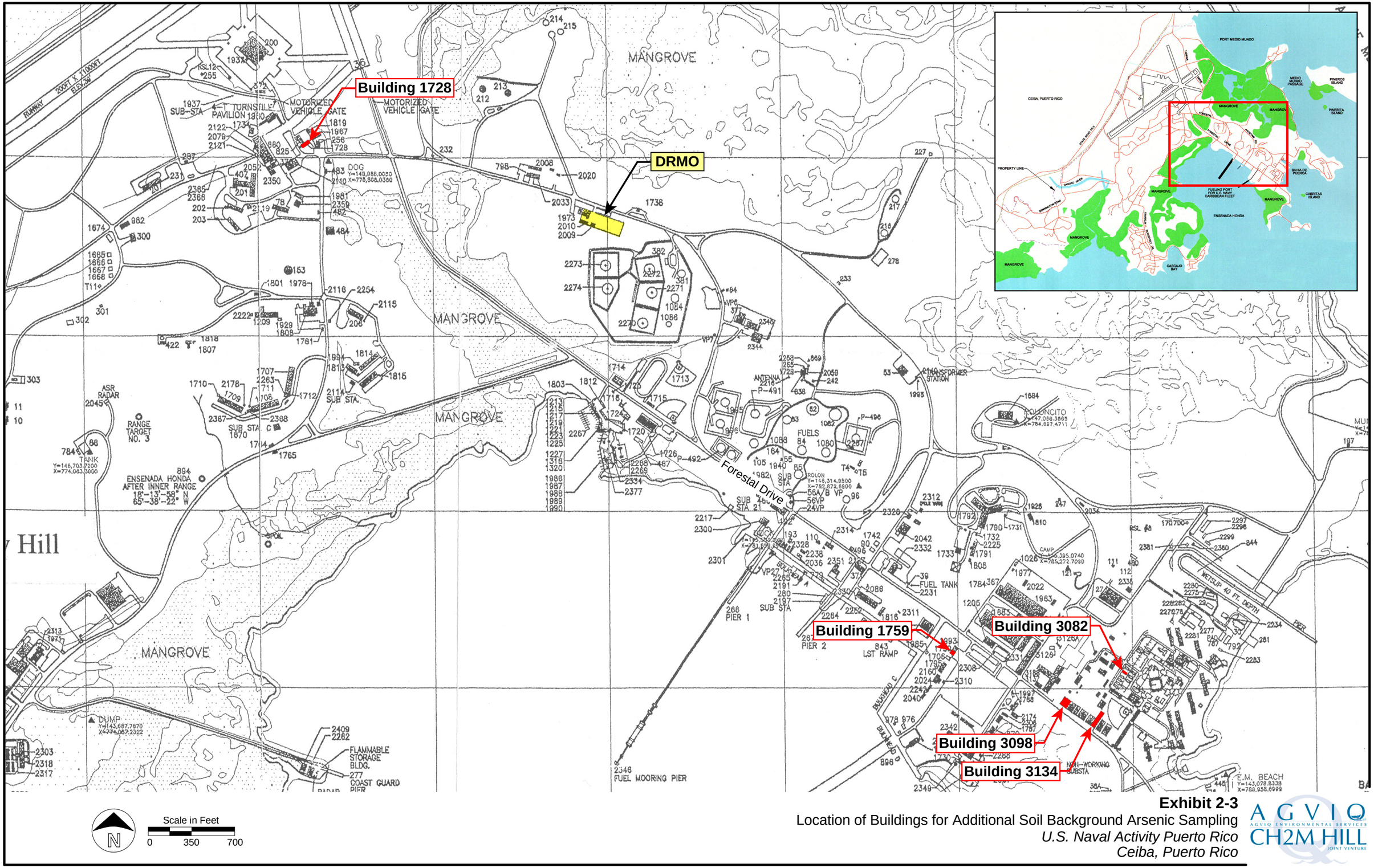

Exhibit 2-3
Location of Buildings for Additional Soil Background Arsenic Sampling
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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EXHIBIT 2-4
Building Information
U.S. Naval Activity Puerto Rico

Building	Date of Construction	Area (Ft^2)	Building Usage
2009	1981	360	Hazardous Waste Storage
3134	1980	8,000	Supply Warehouse
3098	1969	4,000	Tool Room
3084	1969	960	Enlisted Lounge
1759	1973	7,505	Postal Office
1728	1971	4,000	Supply Warehouse

Exhibits 2-5 through 2-9 show the soil sampling locations around each of the five buildings. Each location was sampled on June 7 and June 9, 2006, for arsenic analysis using SW846 Method 6010B. All surface soil samples were collected at a depth of 0 to 6 inches. These samples were collected with a hand auger. The soil samples were collected in 4-ounce glass jars with Teflon®-lined caps. The samples were then placed immediately on ice, and packed in coolers for shipment to PEL Laboratories.

In addition to these samples, seven QC samples were collected and analyzed as follows:

- Three field duplicate samples
- Two matrix spike/matrix spike duplicate (MS/MSD) samples
- One equipment blank
- One field blank

The water samples (equipment and field blanks) were collected in clean 1,000-milliliter plastic jars with Teflon®-lined caps, preserved with nitric acid to adjust the pH to less than 2, placed immediately on ice, and packed in coolers for shipment to PEL Laboratories.

As stated previously, the previously collected soil arsenic concentrations in the Building 2009 area (including former Buildings 2009A, 2009B, 2009C, and 2009D) will be evaluated relative to the new arsenic background concentration. Exhibit 2-10 shows the 50 soil arsenic concentrations in the Building 2009 area.

2.3 Soil Delineation Sampling for TRPH

As described in the *Closure Sampling Report, Building 2009* (JV I, 2005a), the Adjusted 95% UCI for TRPH (DRO) was 230 mg/kg, which exceeded the closure standard of 100 mg/kg. However, of the 21 samples collected from underneath and around Building 2009, only three individual sample concentrations exceeded the closure standard, with concentrations ranging from 101 to 267 mg/kg.

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Background Soil Sample

Exhibit 2-5
New Background Sample Locations - Building 3134
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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ES082006008TPA 315616.AC.RP

Background Soil Sample

Exhibit 2-6
New Background Sample Locations - Building 3098
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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Background Soil Sample

Exhibit 2-7
New Background Sample Locations - Building 3082
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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Background Soil Sample

Exhibit 2-8
New Background Sample Locations - Building 1759
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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N

Background Soil Sample

Exhibit 2-9
New Background Sample Locations - Building 1728
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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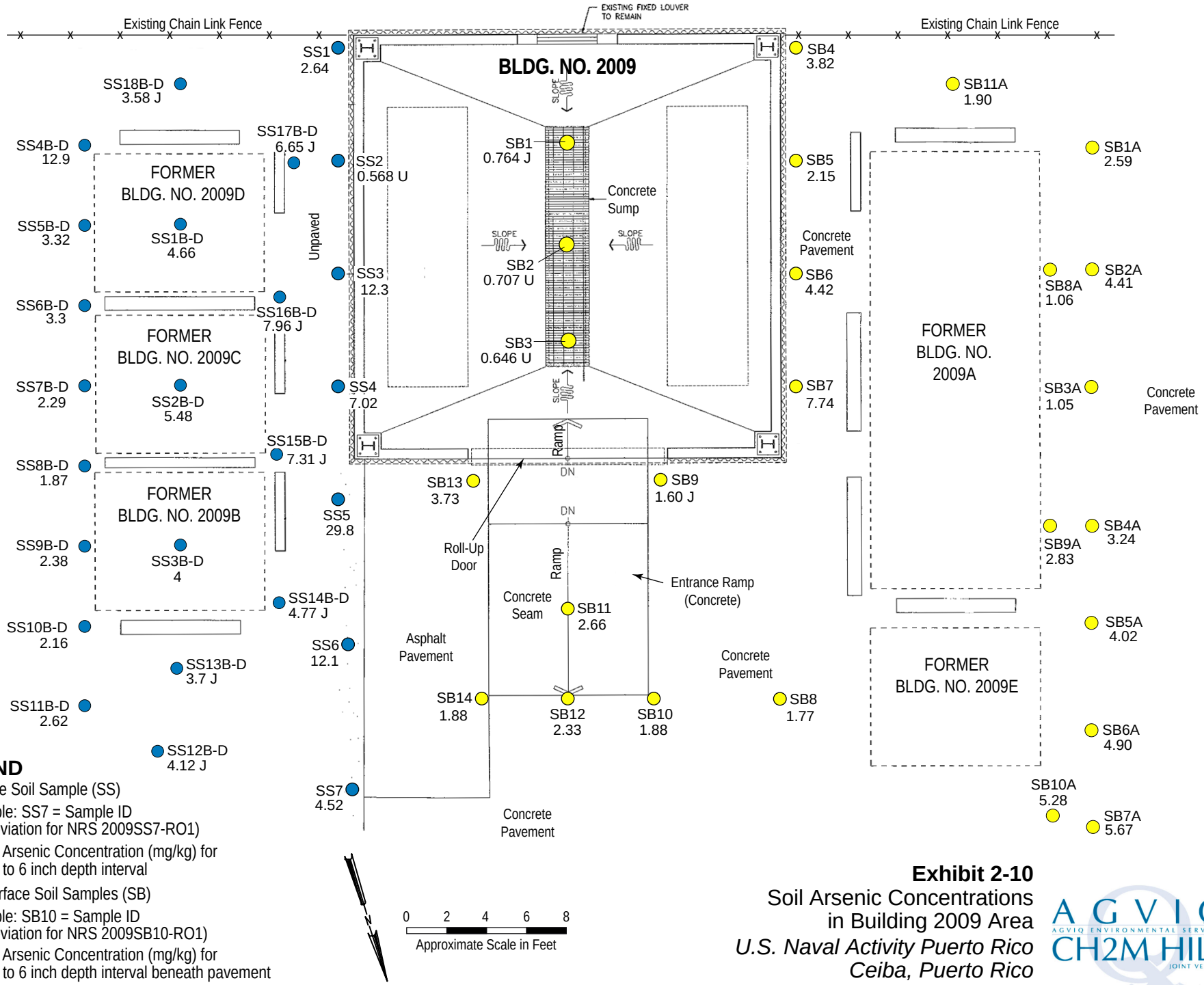

Exhibit 2-10
Soil Arsenic Concentrations
in Building 2009 Area
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

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CH2M HILL JOINT VENTURE

Exhibit 2-11 shows the previous soil sample locations and TRPH (DRO) concentrations. As shown, the three samples with TRPH (DRO) concentrations exceeding the closure standard of 100 mg/kg occurred in the following locations:

- Outside the building under the pavement at the bottom of the northwest corner of the entrance ramp (SB10)
- Immediately west of the bottom of the entrance ramp (SB8)
- At the southwest corner of the building near the fence line (SB4)

During the Phase II closure sampling activities, soil delineation sampling was conducted in the vicinity of these sample locations to delineate, both horizontally and vertically, the extent of TRPH (DRO)-impacted soils with TRPH (DRO) levels above the closure standard of 100 mg/kg.

The Phase II closure soil delineation sampling for TRPH (DRO) was conducted on June 6-8, 2006, in the vicinity of previous sampling locations SB4, SB8, and SB10, where the TRPH (DRO) concentrations exceeded the closure standard of 100 mg/kg. The soil delineation sample locations are shown as samples SB15 through SB22 on Exhibit 2-12, and a total of 21 soil delineation samples were collected from previous borings SB4, SB8, SB10, and new borings SB15 through SB22. At borings SB4, SB8, and SB10, samples were collected from the 1 to 2 foot (ft) and 2 to 3 ft depth intervals. At borings SB15 through SB21, samples were collected from the 0 to 6 inch and 2 to 3 ft depth intervals. Sample SB22 was collected only from a depth of 0 to 6 inches.

Each of these soil boring locations was located in an area that is paved with concrete from 6 to 8 inches thick. The soil samples collected from the 0 to 6-inch depth interval were collected from 0 to 6 inches directly below the concrete pavement. All of the soil samples were collected using a concrete coring device to penetrate the concrete pavement, followed by a hand auger to collect the soil samples from beneath the pavement. The soil underneath the pavement typically consisted of a 3- to 6-inch layer composed primarily of gravel mixed with small amounts of sandy soil, which was underlain by dense clay. However, at soil boring locations SB8, SB10, SB20, and SB21, the gravel/sandy soil layer was 11 to 14 inches thick. At soil sample locations SB10 and SB19, the gravel/sandy soil layer was underlain by 2 to 4 inches of asphalt above the underlying clay layer.

Each sample was collected for TRPH (DRO) analysis using SW846 Method 8015(B). All soil samples were collected in clean 4-ounce glass jars with Teflon®-lined caps, placed immediately on ice, and packed in coolers for shipment to PEL Laboratories. In addition to the soil samples described above, a total of six QC samples were collected and analyzed as follows:

- Two field duplicate samples
- Two MS/MSD samples
- One equipment blank
- One field blank

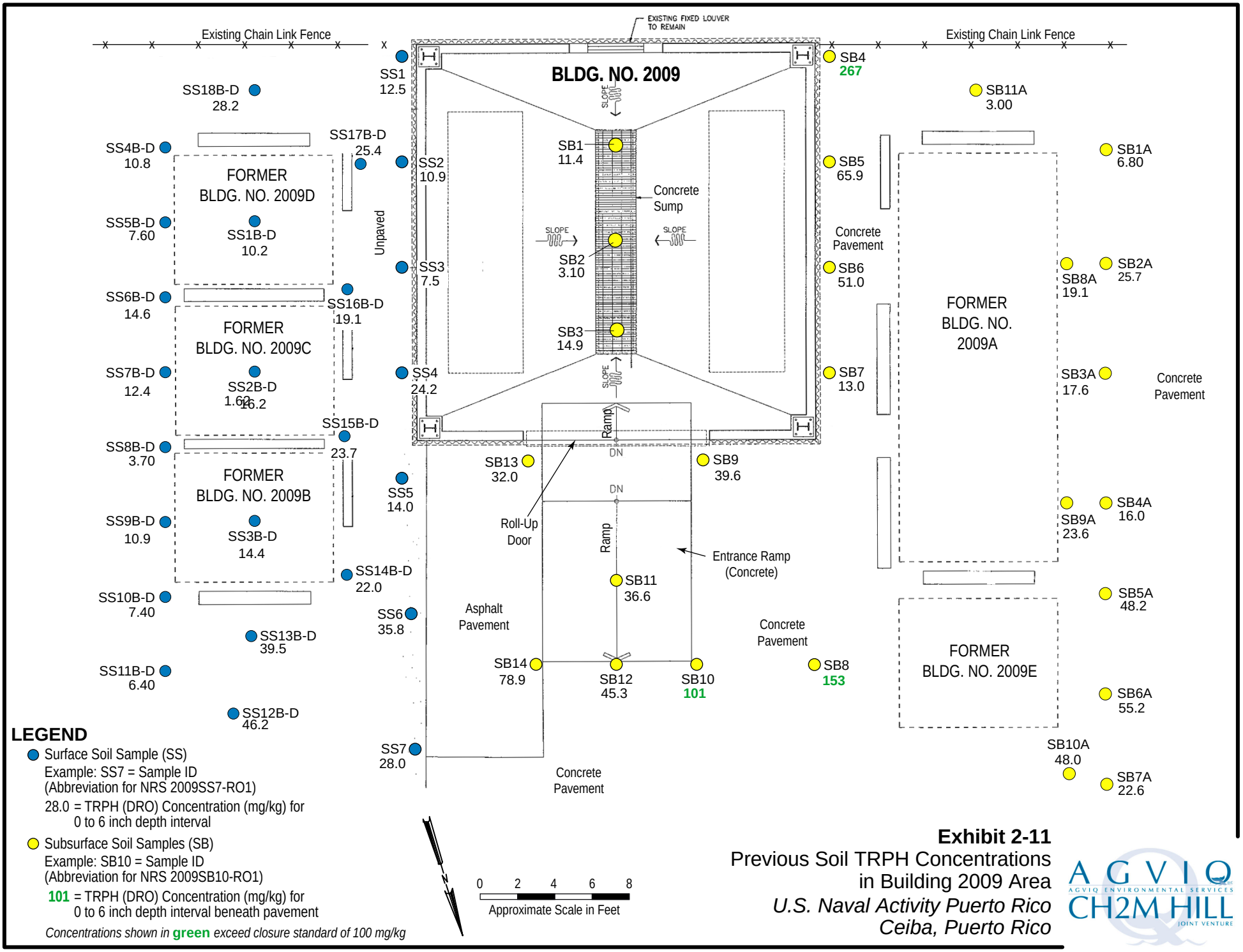
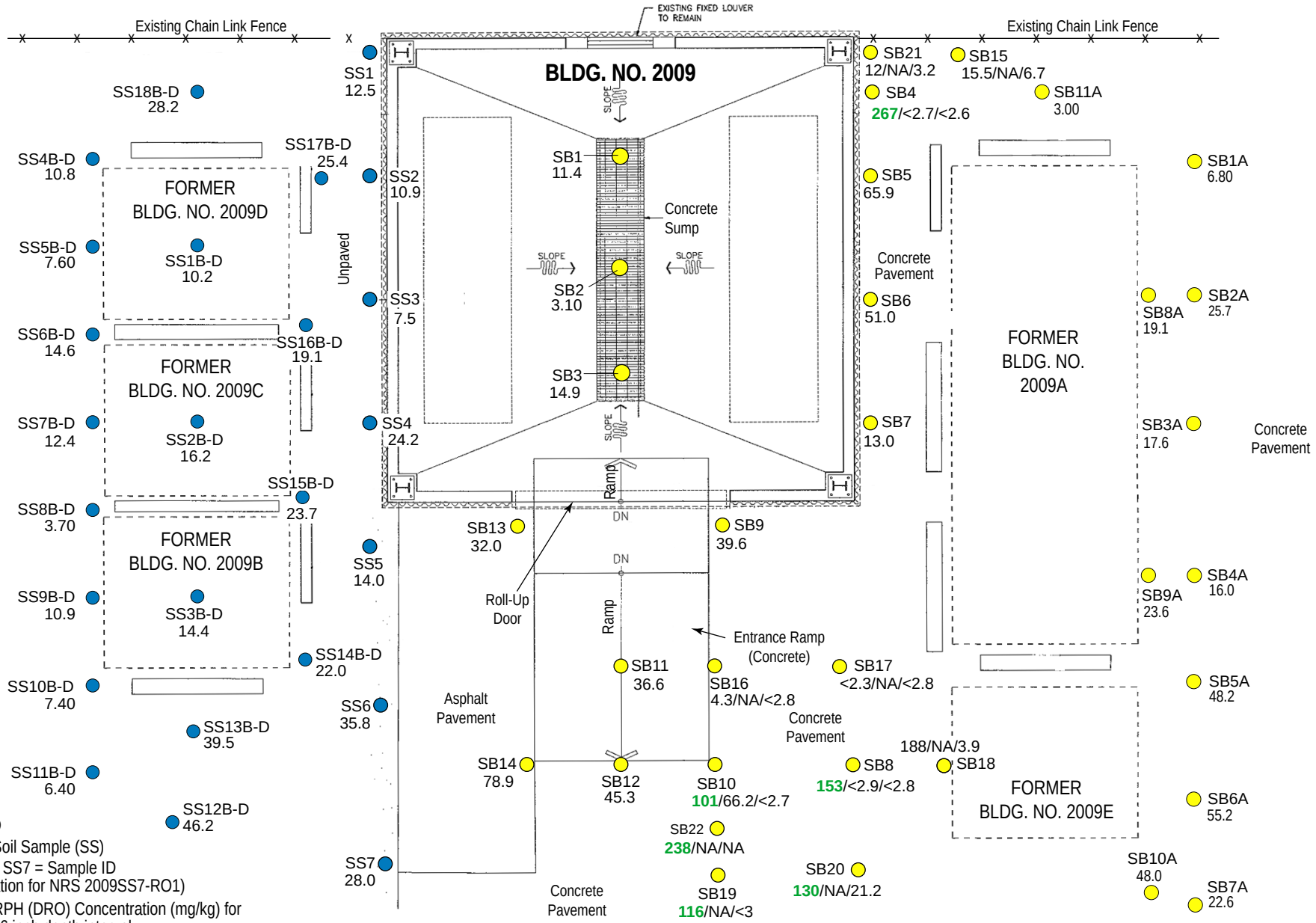


Exhibit 2-11
Previous Soil TRPH Concentrations in Building 2009 Area
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico



LEGEND

- Surface Soil Sample (SS)
  Example: SS7 = Sample ID
  (Abbreviation for NRS 2009SS7-RO1)
  28.0 = TRPH (DRO) Concentration (mg/kg) for 0 to 6 inch depth interval
- Subsurface Soil Samples (SB)
  Example: SB10 = Sample ID
  (Abbreviation for NRS 2009SB10-RO1)
  101/65.9/<2.7 = TRPH (DRO) Concentration (mg/kg) for 0 to 6 inch/1-2 feet/2-3 feet depth intervals, respectively
  NA = Not Analyzed
  *Concentrations shown in **green** exceed closure standard of 100 mg/kg*

Exhibit 2-12
New TRPH Delineation Sample Locations in Building 2009 Area
U.S. Naval Activity Puerto Rico
Ceiba, Puerto Rico

AGVIQ ENVIRONMENTAL SERVICES
CH2M HILL JOINT VENTURE

The water samples (equipment and field blanks) were collected in clean 1-liter amber glass jars with Teflon®-lined caps, preserved with hydrochloric acid to adjust the pH to less than 2, placed on ice, and packed in coolers for shipment to PEL Laboratories.

An organic vapor monitor (OVM) was used to screen all soil samples for volatile organic vapors prior to sampling. The intent of the OVM screening is only to provide a preliminary indication of the degree of potential volatile organic compound (VOC) contamination of the samples. No elevated readings were found at any of the soil boring locations.

2.4 Management of Investigation Derived Waste

Investigation-derived waste (IDW) generated during the Phase II closure soil sampling activities consisted of waste paper towels, used personal protective equipment (PPE) (primarily waste rubber gloves), and decontamination water. The solid IDW was collected in two plastic garbage bags, and 15 gallons of decontamination water were collected in 5-gallon buckets.

According to the Phase II Closure Sampling and Analysis Plan, management of the IDW would be consistent with the procedures used during the initial closure sampling activities if:

- No elevated OVM measurements were observed during the soil TRPH delineation sampling, and
- The Phase II sampling results were not significantly higher than the initial closure sampling results

Based on the initial closure sampling results, including Toxicity Characteristic Leaching Procedure (TCLP) test results, the IDW generated during the initial closure activities was determined not to be a characteristic hazardous waste. Accordingly, the solid IDW was disposed of in the Fajardo Municipal Landfill, and the liquid IDW was discharged to the sanitary sewer system at NAPR.

No elevated OVM measurements were observed during the Phase II closure delineation sampling for TRPH (DRO), and the Phase II sampling results for TRPH (DRO) and arsenic were not significantly higher than the initial closure sampling results. For this reason, the two bags of solid IDW generated during the Phase II closure activities were disposed of in a solid waste dumpster at the Public Works Facility at NAPR (and ultimately the NAPR Landfill), and the 15 gallons of decontamination water were discharged to the sanitary sewer system.

SECTION 3

Soil Sampling Results

This section presents the Phase II closure soil sampling results and the statistical analysis of the sampling data, including an evaluation of the Building 2009 area (or site) sampling data relative to closure standards. Specifically, this section contains:

- Presentation of expanded background soil arsenic sampling data set, and statistical analysis of the expanded data set to develop the new arsenic background level
- Statistical analysis of the site arsenic sampling data, including an evaluation of the site arsenic level relative to the new background arsenic level and EPA Region 3 RBC for arsenic
- Presentation of the expanded site TRPH (DRO) sampling results, and statistical analysis of the expanded TRPH (DRO) data set, including an evaluation of the site TRPH (DRO) level relative to the 100 mg/kg closure standard for TRPH (DRO)

3.1 Background Soil Arsenic Sampling Results

Exhibit 3-1 presents the background soil sampling data for arsenic, including the five previously used native soil sample background concentrations, and the additional 24 native soil sample background concentrations from the Phase II closure sampling. The complete laboratory report for the additional 24 soil samples and associated QC samples, including chain of custody forms, is contained on the CD provided in Appendix A.

EXHIBIT 3-1
Background Soil Arsenic Sample Results
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	Arsenic Concentration (mg/kg)
9BGSB01[a]	06/26/1999	N	9BGSS01	2.2 J
9BGSB01	06/26/1999	FD	9BGSS01D	0.8 J
9BGSB02[a]	06/26/1999	N	9BGSS02	2.5 J
9BGSB03[a]	06/26/1999	N	9BGSS03	2.3 J
9BGSB04[a]	06/26/1999	N	9BGSS04	2.1 J
9BGSB05[a]	06/26/1999	N	9BGSS05	0.21 J
NRS2009SS01	06/07/2006	N	NRS2009SS01-B1	2.28 J
NRS2009SS02	06/07/2006	N	NRS2009SS02-B1	2.2 J
NRS2009SS03	06/07/2006	N	NRS2009SS03-B1	2.77 UJ
NRS2009SS04	06/07/2006	N	NRS2009SS04-B1	2.62 UJ
NRS2009SS05	06/09/2006	N	NRS2009SS05-B1	0.576 UJ
NRS2009SS06	06/09/2006	N	NRS2009SS06-B1	0.504 UJ

EXHIBIT 3-1
Background Soil Arsenic Sample Results
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	Arsenic Concentration (mg/kg)
NRS2009SS07	06/09/2006	FD	NRS2009FD03-B1	2.48 UJ
NRS2009SS07	06/09/2006	N	NRS2009SS07-B1	2.63 UJ
NRS2009SS08	06/09/2006	N	NRS2009SS08-B1	1.27 J
NRS2009SS09	06/09/2006	N	NRS2009SS09-B1	3.23 J
NRS2009SS10	06/09/2006	N	NRS2009SS10-B1	1.08 UJ
NRS2009SS11	06/09/2006	N	NRS2009SS11-B1	2 UJ
NRS2009SS12	06/09/2006	N	NRS2009SS12-B1	2.76 UJ
NRS2009SS13	06/09/2006	N	NRS2009SS13-B1	0.097 UJ
NRS2009SS14	06/09/2006	N	NRS2009SS14-B1	0.483 UJ
NRS2009SS15	06/09/2006	N	NRS2009SS15-B1	1.14 UJ
NRS2009SS16	06/09/2006	N	NRS2009SS16-B1	2.37 U
NRS2009SS17	06/09/2006	FD	NRS2009FD04-B1	5.7 U
NRS2009SS17	06/09/2006	N	NRS2009SS17-B1	4.94 U
NRS2009SS18	06/09/2006	N	NRS2009SS18-B1	5.44 U
NRS2009SS19	06/09/2006	N	NRS2009SS19-B1	5.71 U
NRS2009SS20	06/09/2006	N	NRS2009SS20-B1	1.18 U
NRS2009SS21	06/09/2006	FD	NRS2009FD05-B1	3.17 U
NRS2009SS21	06/09/2006	N	NRS2009SS21-B1	3.3 U
NRS2009SS22	06/09/2006	N	NRS2009SS22-B1	3.33 =
NRS2009SS23	06/09/2006	N	NRS2009SS23-B1	1.2 U
NRS2009SS24	06/09/2006	N	NRS2009SS24-B1	0.104 U

Notes:
[a] Background sample results for 1999 collection date can be found in *Corrective Measures Study Investigation Report for SWMU 9* (Baker Environmental, Inc., April 25, 2003).
Field duplicates are included in this table for comparison purposes and are not included in the statistical analysis.
mg/kg = milligrams per kilogram
N = Native sample
FD = Field duplicate sample
J = Estimated concentration
U = Undetected. Not detected above method detection limit.
UJ = Undetected, Reporting Limit Estimated

3.1.1 Statistical Methodology and Results for Background Arsenic Data Evaluation

The statistical methodology presented in the Phase II Closure Sampling and Analysis Plan (SAP) for developing the background soil arsenic level was the Student's *t* test using two degrees of freedom and a 95% UCI. This test is typically used with small data sets. Using this methodology, the background limit for arsenic soil would be calculated as follows:

Limit = (M) + (T * D)

Where:

M = Mean constituent concentration for the 29 background samples (5 existing samples and 24 new samples)

T = Student t factor for 2 degrees of freedom and a 95% confidence interval (CI) (2.92 for a single tailed t).

D = Standard deviation of the background concentration data

According to the Phase II Closure SAP, this same statistical methodology would be used to determine the 95% UCI for the soil arsenic samples collected from the Building 2009 area, and the 95%UCI for the site samples would be compared to the background limit (as calculated above) or the EPA Region 3 RBC of 1.91 mg/kg, whichever was higher, as the clean closure standard.

This methodology was initially chosen because the sampling data sets for the background soil arsenic concentrations and the soil sampling data for the individual buildings (Buildings 2009, 2009A, 2009B, 2009C, and 2009D) were small. However, in light of the larger data sets that now exist for background arsenic in soil, and the combined soil sampling data set for the entire Building 2009 area (including former Buildings 2009A, 2009B, 2009C, and 2009D), other statistical methods are more technically appropriate for these larger data sets. Additionally, given these larger data sets and EPA guidance on statistical methods for establishing representative background levels and evaluating environmental sampling data for human and environmental health risk evaluations, alternate statistical methods for analyzing the background soil arsenic and Building 2009 area sampling data were reviewed.

The overarching objective in the statistical evaluation of the background and site soil sample data sets is to determine whether significant differences exist between the site soil arsenic concentrations and the background concentrations. To achieve this objective, EPA recommends the systematic application of various statistical methods to determine the differences in the data sets (EPA, 2000; EPA, 2001).

Commonly, the initial stages of the evaluation include determining the data distribution type for each data set, using graphical and numerical methods. Example graphical methods recommended in the guidance include X-Y plots and the box-and-whisker plots. Box-and-whisker plots are recommended by EPA guidance for use during statistical evaluations to demonstrate how much overlap exists in data between two or more populations (EPA, 2004a). The plots for two or more different data sets simultaneously present information on the central tendency, variability, and skewness for each sample data set by sketching the center 50 percent of the concentrations with a box, and then illustrating the typical tail regions of the distribution with whiskers (EPA, 2000). This technique is particularly effective for comparison of the background arsenic data set to the Building 2009 area soil arsenic concentration data set.

Once the distribution type is determined, then the area-wide upper-bound average concentrations at different confidence limits (UCLs), and the tolerance limits (UTLs) are estimated. Typically, the upper tolerance limit at 95% (UTL) is estimated for background

data, whereas the upper confidence limit on the mean at 95% level (UCL) is used for site data for comparisons against risk-based protection levels such as EPA Region 3 RBCs.

3.1.1.1 Background Data Distribution Type

The numerical methods for determination of the data distribution type include t-test, normal and log-normal probability estimations, and comparing the estimated probability levels with a value of 0.05. For example, if the estimated probability value for normal distribution is equal to 0.05 or higher, then the data are determined to be normally distributed. If the values are significantly lower than 0.05, then data are log-transformed to determine whether the transformed data follow a normal distribution by repeating the normality probability test. If the log-transformed data indicate a normal distribution, then data is determined to be log-normally distributed. Both these data sets are further evaluated using "parametric" statistical methods. If both normal and log-transformed data do not follow normal distribution, then data distribution is unknown, and typically is treated using "non-parametric" statistical tests recommended in the guidance.

The background arsenic data set were tested for distribution type using both a graphical method and a numerical method. The graphical method used was a box-and-whisker plot, and the numerical method used was the Shapiro-Wilk test (EPA, 2000).

Box-and-Whisker Plot of Arsenic Data Sets

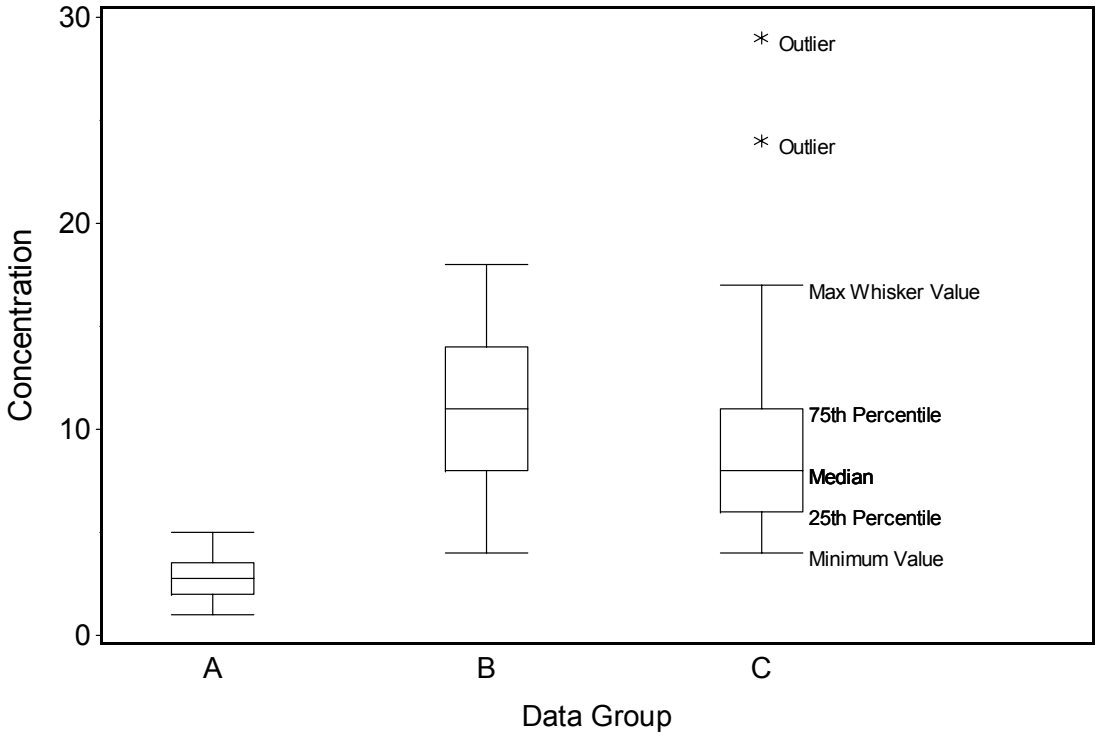
Box-and-whisker plots are constructed as follows:

- The height of the box represents the interquartile range (IQR). The IQR is the distance between the 25th and the 75th percentiles.
- The horizontal line in the box interior represents the median.
- The vertical lines issuing from the box extend to the minimum and maximum measured values (as long as these minimum and maximum values do not extend further from the box than a distance of 1.5 times the IQR).
- Individual data symbols are used for concentrations that exceed the whiskers.

These principles are seen in the example box-and-whisker plots shown in Exhibit 3-2. The upper and lower edges of the box and the ends of the whiskers all represent actual measured concentrations in the sample data set. Specifically, for Data Group C, the 25th percentile, 75th percentile, and median are all labeled as part of the box. In this plot, the overall minimum value serves as the end of the whisker since it was within a distance of 1.5 x IQR from the box. The maximum values (and the next to the largest value), however, are further from the box than a distance of 1.5 × IQR. Thus, they are labeled as outliers. The third largest overall value, which represents the largest value within a distance of 1.5 x IQR, serves as the end of the upper whisker.

Various interpretations are possible by examining these box-and-whisker plots. For example, if extensive overlap exists between the box plots from different data groups (such as between Data Groups B and C), then the measurements from each group, on average, are very similar. Conversely, little overlap (as seen between Data Group A and the other two) suggests that the measurements from the groups are, on average, quite different.

EXHIBIT 3-2
Example Box-and-Whisker Plots
Naval Activity Puerto Rico



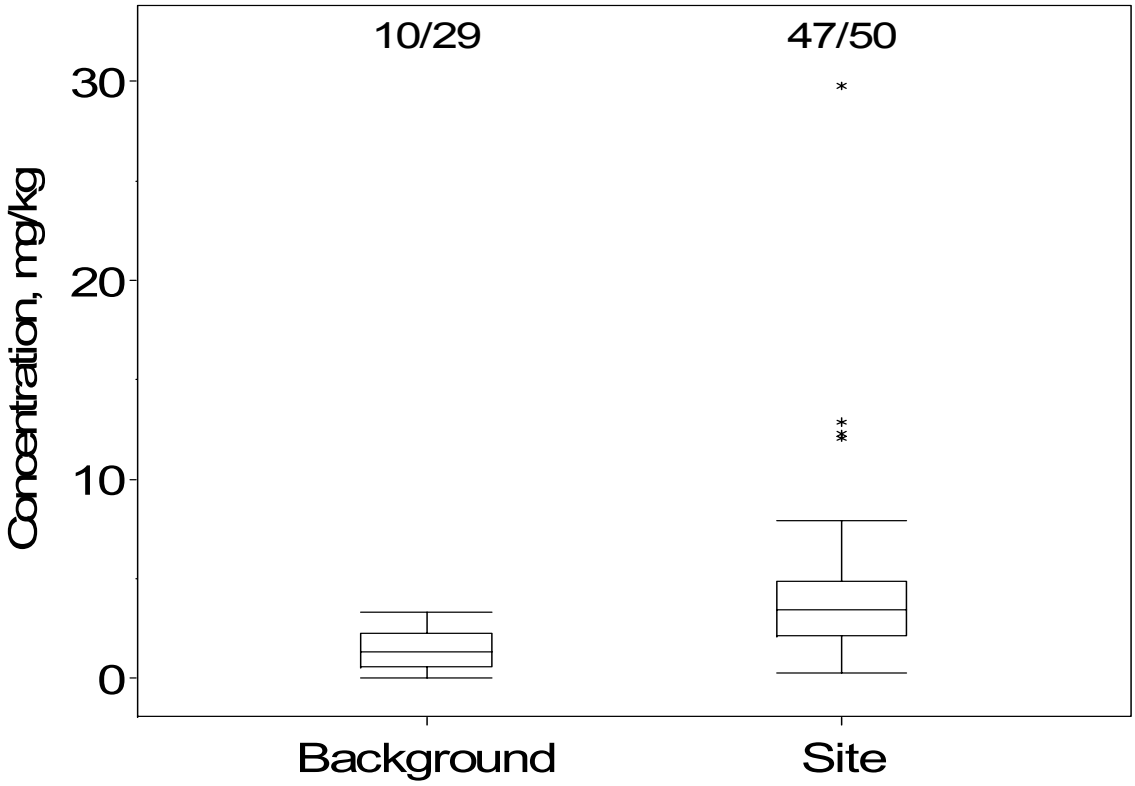
Additionally, the plots for Data Groups A and B demonstrate normal distribution of the data sets because both the 25th and 75th percentile lines appear equidistant from the median value, as do the minimum and maximum values of the data set.

The box-and-whisker plot developed for the arsenic background data set and for the Building 2009 site arsenic data set is presented in Exhibit 3-3.

The following is evident from a review of Exhibit 3-3:

- The background arsenic data set appears to be normally distributed.
- The Building 2009 area (site) soil arsenic data set does not appear to be normally distributed, with three outlier concentrations above the maximum whisker value.
- The Building 2009 area soil arsenic data set appears different from the background data set, and the site concentrations appear to be higher than the background values.

EXHIBIT 3-3
Box-and-Whisker Plot for Arsenic Data Sets - Background and Building 2009 Site Soil Arsenic Concentrations
Naval Activity Puerto Rico



Numerical Analysis of Arsenic Data Distribution

The numerical analytical method used to determine the data distribution type (also known as the goodness-of-fit test) of the background arsenic data set was the Shapiro-Wilk test (EPA, 2000). In applying this test, the estimated W-value is compared against a value at significance level, alpha (p) = 0.05, and if the estimated p value is greater than 0.05, then the data are considered normally distributed. The W–value is estimated as follows:

$$w = \left(\frac{b}{s\sqrt{n-1}} \right)^2$$

$$b = \sum_{i=1}^{k} a_{n,i} (x_{n-i+1} - x_i) = \sum_{i=1}^{k} b_i$$

Where:

b = denominator of the w-statistic
n = number of samples
k = n/2, if 'n' is an even number, and k=((n-1)/2) if 'n' is an odd number
i = sample rank
a = coefficient from Tables A6 and A7 (Gilbert, 1987
x = sample

Typically, an assumption of normality is acceptable if the p-value for the Shapiro-Wilk test is 0.05 or higher. As shown in Exhibit 3-4, the estimated normality (or p-value) for the background arsenic data set is 0.08, indicating that the background data set is normally distributed.

3.1.1.2 Background Arsenic Level

To establish the background arsenic level, the upper tolerance limit (UTL) was estimated for the arsenic background data set. As described above, the arsenic background data set indicated normal distribution type, and the UTL is calculated for normally distributed data as follows:

The upper 100(1-∞)% confidence limit for the true 95th quantile ($x_{0.95}$) or UTL is calculated as:

$$UTL_{1-\alpha}(x_{0.95}) = \bar{x} + sK_{1-\alpha,0.95}$$

Where:

$\bar{x}$ = Mean of untransformed data
s = Standard deviation of untransformed data
$K_{1-a,\,0.95}$ = Tolerance interval for the 95th quantile at the specified confidence level (Table A3 in Gilbert, 1987; EPA, 1992)

The calculated background limit for arsenic is shown in Exhibit 3-4, which shows an arsenic limit of 3.70 mg/kg. The UTL can be higher than the maximum value in the background data set that was used to calculate the UTL. Such is the case for the background arsenic, where the UTL was 3.70 mg/kg, while the maximum detected value was 3.33 mg/kg.

Because the calculated arsenic background limit of 3.70 mg/kg exceeds the EPA Region 3 arsenic RBC of 1.91 mg/kg, the arsenic closure standard for the clean closure of the Building 2009 area is 3.70 mg/kg.

3.1.2 Comparison of Building 2009 Area Arsenic Level to Background Level

Exhibit 3-5 presents the soil arsenic concentrations from the initial closure sampling and analysis activities for Buildings 2009 and former Buildings 2009A, 2009B, 2009C, and 2009D. As with the background arsenic data set, the Building 2009 area arsenic data set also was analyzed for data distribution type. As shown previously by the box-and-whisker plot of the Building 2009 area (site) arsenic data set in Exhibit 3-3, the Building 2009 site data set does not appear to be normally distributed.

This was confirmed by the numerical analysis of the Building 2009 site arsenic data set. As with the background arsenic data set, the Building 2009 area arsenic data set was tested for normality by applying the Shapiro-Wilk test. Although the Building 2009 area arsenic data set was not found to be normally distributed, application of the Shapiro-Wilk test to the log-transformed data set revealed that the data set appeared to be log-normally distributed. As shown in Exhibit 3-6, the estimated probability value of 0.03 for the log-transformed data set is approaching the commonly accepted probability for log-normality value of 0.05.

EXHIBIT 3-4
Background Soil Arsenic Limit Calculations
U.S. Naval Activitiy Puerto Rico

Parameter	Number Analyzed	Number Detected	Min Detected	Max Detected	Mean Value	Median Value	Standard Deviation	90th Percentile	95th Percentile	Normality Probability	Lognormality Probability	Background Limit[a]	EPA Region 3 RBC	Units
Inorganics														
Arsenic	29	10	0.21	3.33	1.45	1.32	1.01	2.86	3.23	0.08	0.001	3.70	1.91	mg/kg

Notes:
[a] Background Limit is the calculated Upper Tolerance Limit (UTL) for normally distributed data,

$$UTL_{1-\alpha}(x_{0.95}) = \bar{x} + sK_{1-\alpha,0.95}$$

Where:
x = Mean of untransformed data
s = standard deviation of untransformed data
$K_{1-a,\ 0.95}$ = Tolerance interval for the 95th quantile at the specified confidence level
Data evaluated only includes normal samples.
RBC value from the April 07, 2005 Region 3 Risk Based Concentrations for industrial soils.
mg/kg = milligrams per kilogram
For data sets containing nondetected values, mean concentration was calculated using 1/2 of the minimum detection limit value.
Data evaluated only includes normal samples. (Duplicate QC samples were not included.)
Sources:
Analytical data for 1999 sampling event provided from *Corrective Measures Study Investigation Report for SWMU 9* (Baker Environmental, Inc., April 25, 2003).
All other analytical data provided by CH2M HILL

EXHIBIT 3-5
Soil Arsenic Concentrations in DRMO Building 2009 Area
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	Arsenic Concentration (mg/kg)
NRS2009ASB1	03/03/2005	N	NRS2009ASB1-R01	2.59
NRS2009ASB10	03/04/2005	N	NRS2009ASB10-R01	5.28
NRS2009ASB11	03/03/2005	N	NRS2009ASB11-R01	1.9
NRS2009ASB2	03/04/2005	N	NRS2009ASB2-R01	4.41
NRS2009ASB3	03/04/2005	N	NRS2009ASB3-R01	1.05
NRS2009ASB4	03/04/2005	N	NRS2009ASB4-R01	3.24
NRS2009ASB5	03/04/2005	FD	NRS2009AFD1P-0205	3.4
NRS2009ASB5	03/04/2005	N	NRS2009ASB5-R01	4.02
NRS2009ASB6	03/04/2005	N	NRS2009ASB6-R01	4.9
NRS2009ASB7	03/04/2005	N	NRS2009ASB7-R01	5.67
NRS2009ASB8	03/04/2005	N	NRS2009ASB8-R01	1.06
NRS2009ASB9	03/04/2005	N	NRS2009ASB9-R01	2.83
NRS2009BSS1	03/07/2005	N	NRS2009BSS1-R01	4.66
NRS2009BSS10	03/07/2005	N	NRS2009BSS10-R01	2.16
NRS2009BSS11	03/07/2005	N	NRS2009BSS11-R01	2.62
NRS2009BSS12	03/07/2005	N	NRS2009BSS12-R01	4.12 J
NRS2009BSS13	03/07/2005	N	NRS2009BSS13-R01	3.7 J
NRS2009BSS14	03/07/2005	N	NRS2009BSS14-R01	4.77 J
NRS2009BSS15	03/07/2005	FD	NRS2009BFD1P-0205	8.18 J
NRS2009BSS15	03/07/2005	N	NRS2009BSS15-R01	7.31 J
NRS2009BSS16	03/07/2005	N	NRS2009BSS16-R01	7.96 J
NRS2009BSS17	03/07/2005	N	NRS2009BSS17-R01	6.65 J
NRS2009BSS18	03/07/2005	N	NRS2009BSS18-R01	3.58 J
NRS2009BSS2	03/07/2005	N	NRS2009BSS2-R01	5.48
NRS2009BSS3	03/07/2005	N	NRS2009BSS3-R01	4
NRS2009BSS4	03/07/2005	N	NRS2009BSS4-R01	12.9
NRS2009BSS5	03/07/2005	N	NRS2009BSS5-R01	3.32
NRS2009BSS6	03/07/2005	N	NRS2009BSS6-R01	3.3
NRS2009BSS7	03/07/2005	N	NRS2009BSS7-R01	2.29
NRS2009BSS9	03/07/2005	N	NRS2009BSS9-R01	2.38

EXHIBIT 3-5
Soil Arsenic Concentrations in DRMO Building 2009 Area
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	Arsenic Concentration (mg/kg)
NRS2009SB1	03/04/2005	N	NRS2009SB1-R01	0.764 J
NRS2009SB10	03/02/2005	N	NRS2009SB10-R01	1.88
NRS2009SB11	03/02/2005	N	NRS2009SB11-R01	2.66
NRS2009SB12	03/02/2005	N	NRS2009SB12-R01	2.33
NRS2009SB13	03/02/2005	FD	NRS2009FD4P-0205	2.22
NRS2009SB13	03/02/2005	N	NRS2009SB13-R01	3.73
NRS2009SB14	03/02/2005	N	NRS2009SB14-R01	1.88
NRS2009SB2	03/04/2005	N	NRS2009SB2-R01	0.707 U
NRS2009SB3	03/03/2005	N	NRS2009SB3-R01	0.646 U
NRS2009SB4	03/02/2005	N	NRS2009SB4-R01	3.82
NRS2009SB5	03/03/2005	N	NRS2009SB5-R01	2.15
NRS2009SB6	03/03/2005	N	NRS2009SB6-R01	4.42
NRS2009SB7	03/03/2005	FD	NRS2009FD3P-0205	6.01
NRS2009SB7	03/03/2005	N	NRS2009SB7-R01	7.74
NRS2009SB8	03/02/2005	N	NRS2009SB8-R01	1.77
NRS2009SB9	03/02/2005	N	NRS2009SB9-R01	1.6 J
NRS2009SS1	03/07/2005	N	NRS2009SS1-R01	2.64
NRS2009SS2	03/07/2005	N	NRS2009SS2-R01	0.568 U
NRS2009SS3	03/07/2005	FD	NRS2009FD2P-0205	10.6
NRS2009SS3	03/07/2005	N	NRS2009SS3-R01	12.3
NRS2009SS4	03/07/2005	N	NRS2009SS4-R01	7.02
NRS2009SS5	03/07/2005	N	NRS2009SS5-R01	29.8
NRS2009SS6	03/07/2005	N	NRS2009SS6-R01	12.1
NRS2009SS7	03/07/2005	N	NRS2009SS7-R01	4.52

Notes:
[a] Background sample results for 1999 collection date can be found in *Corrective Measures Study Investigation Report for SWMU 9* (Baker Environmental, Inc., April 25, 2003).
Field duplicates are included in this table for comparison purposes and are not included in the statistical analysis.
mg/kg = milligrams per kilogram
N = Native sample
FD = Field duplicate sample
J = Estimated concentration
U = Undetected. Not detected above method detection limit.
UJ = Undetected, Reporting Limit Estimated

EXHIBIT 3-6
Statistical Evaluation of Building 2009 Area Soil Arsenic Concentrations
U.S. Naval Activitiy Puerto Rico

Parameter	Number Analyzed	Number Detected	Min Detected	Max Detected	Mean Value	Median	Standard Deviation	90th Percentile	95th Percentile	Normality Probability	Lognormality Probability	95% UCL (of the mean)[a]	Background Limit[b]	EPA Region 3 RBC	Exceedance[c]
Arsenic	50	47	0.764	29.8	4.48	3.45	4.64	7.85	12.3	0.000	0.030	5.49	3.70	1.91	Yes

Notes:
[a] site data calculated as the 95% Upper Confidence Limit (UCL_{95}):

$$UCL = \bar{x} + t\left(\frac{s}{\sqrt{n}}\right)$$

For normally distributed data

$$UCL = e^{\left(\bar{x}+0.5s^2+sH/\sqrt{n-1}\right)}$$

For lognormally distributed data

Where:
UCL = Upper confidence limit
x = mean of the untransformed data
t = student-t statistic (e.g., from Table A2 published in Gilbert, 1987)
s = standard deviation of untransformed data
n = number of samples

[b] Background Limit is the calculated Upper Tolerance Limit (UTL) for normally distributed data,

$$UTL_{1-\alpha}(x_{0.95}) = \bar{x} + sK_{1-\alpha,0.95}$$

[c] Exceedance of closure standards for soil is based on the 95% UCL for arsenic exceeding background.
RBC value from the April 07, 2005 Region 3 Risk Based Concentrations for industrial soils.
For data sets containing nondetected values, mean concentration was calculated using ½ of the minimum detection limit value.
Data evaluated only includes normal samples. (Duplicate QC samples were not included.)
Concentrations reported in milligrams per kilogram (mg/kg)

Given the log-normal distribution of the Building 2009 area arsenic data set, the 95% UCL was calculated using the following formula (EPA, 1992):

$$UCL = e^{\left(\bar{x}+0.5s^2+sH/\sqrt{n-1}\right)} \qquad (2)$$

Where:

UCL	=	upper confidence limit
e	=	constant (base of the natural log, equal to 2.718)
$\bar{x}$	=	mean of the log-transformed data
s	=	standard deviation of the log-transformed data
H	=	H-statistic (Table A12 in Gilbert, 1987)
n	=	number of samples

The calculation of the 95% UCL of the Building 2009 area soil arsenic concentrations is shown in Exhibit 3-6. As shown, the 95% UCL is 5.49 mg/kg arsenic, which exceeds the background arsenic level (95%UTL for arsenic) of 3.70 mg/kg, which is the clean closure standard for arsenic.

3.2 TRPH Soil Sampling Results

Exhibit 3-7 presents the TRPH soil sampling results for the Building 2009 area, including the additional delineation sampling results from the Phase II closure sampling activities. These results were also depicted in Exhibit 2-12 (presented previously). The complete laboratory report, including the chain of custody forms for the additional delineation samples collected during the Phase II closure sampling activities, is provided in Appendix A.

3.2.1 Statistical Methodology and Results for TRPH Data Evaluation

As with the statistical evaluation of the arsenic data for the Building 2009 area, the data distribution type for the soil TRPH data was analyzed numerically using the Shapiro-Wilk test. The application of this test indicated that the TRPH data was not normally distributed.

Although the Building 2009 area TRPH data set was not found to be normally distributed, application of the Shapiro-Wilk test to the log-transformed data set revealed that the data set appeared to be log-normally distributed. As shown in Exhibit 3-8, the estimated probability value is 0.078 for the log-transformed data, which is higher than 0.05 (indicating log-normality).

Given the log-normal distribution of the Building 2009 area TRPH data set, the 95% UCL was calculated using the following formula (EPA, 1992):

EXHIBIT 3-7
TRPH Soil Sampling Results in DRMO Building 2009 Area
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	TRPH Concentration (mg/kg)
NRS2009ASB1	03/03/2005	N	NRS2009ASB1-R01	6.8
NRS2009ASB10	03/04/2005	N	NRS2009ASB10-R01	48
NRS2009ASB11	03/03/2005	N	NRS2009ASB11-R01	3
NRS2009ASB2	03/04/2005	N	NRS2009ASB2-R01	25.7
NRS2009ASB3	03/04/2005	N	NRS2009ASB3-R01	17.6
NRS2009ASB4	03/04/2005	N	NRS2009ASB4-R01	16
NRS2009ASB5	03/04/2005	FD	NRS2009AFD1P-0205	23.3
NRS2009ASB5	03/04/2005	N	NRS2009ASB5-R01	48.2
NRS2009ASB6	03/04/2005	N	NRS2009ASB6-R01	55.2
NRS2009ASB7	03/04/2005	N	NRS2009ASB7-R01	22.6
NRS2009ASB8	03/04/2005	N	NRS2009ASB8-R01	19.1
NRS2009ASB9	03/04/2005	N	NRS2009ASB9-R01	23.6
NRS2009BSS1	03/07/2005	N	NRS2009BSS1-R01	10.2
NRS2009BSS10	03/07/2005	N	NRS2009BSS10-R01	7.4
NRS2009BSS11	03/07/2005	N	NRS2009BSS11-R01	6.4
NRS2009BSS12	03/07/2005	N	NRS2009BSS12-R01	46.2
NRS2009BSS13	03/07/2005	N	NRS2009BSS13-R01	39.5
NRS2009BSS14	03/07/2005	N	NRS2009BSS14-R01	22
NRS2009BSS15	03/07/2005	FD	NRS2009BFD1P-0205	17.1
NRS2009BSS15	03/07/2005	N	NRS2009BSS15-R01	23.7
NRS2009BSS16	03/07/2005	N	NRS2009BSS16-R01	19.1
NRS2009BSS17	03/07/2005	N	NRS2009BSS17-R01	25.4
NRS2009BSS18	03/07/2005	N	NRS2009BSS18-R01	28.2
NRS2009BSS2	03/07/2005	N	NRS2009BSS2-R01	16.2
NRS2009BSS3	03/07/2005	N	NRS2009BSS3-R01	14.4
NRS2009BSS4	03/07/2005	N	NRS2009BSS4-R01	10.8
NRS2009BSS5	03/07/2005	N	NRS2009BSS5-R01	7.6
NRS2009BSS6	03/07/2005	N	NRS2009BSS6-R01	14.6
NRS2009BSS7	03/07/2005	N	NRS2009BSS7-R01	12.4
NRS2009BSS9	03/07/2005	N	NRS2009BSS9-R01	10.9

EXHIBIT 3-7
TRPH Soil Sampling Results in DRMO Building 2009 Area
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	TRPH Concentration (mg/kg)
NRS2009SB1	03/04/2005	N	NRS2009SB1-R01	11.4
NRS2009SB10	03/02/2005	N	NRS2009SB10-R01	101 J
NRS2009SB11	03/02/2005	N	NRS2009SB11-R01	36.6 J
NRS2009SB12	03/02/2005	N	NRS2009SB12-R01	45.3 J
NRS2009SB13	03/02/2005	FD	NRS2009FD4P-0205	35.1 J
NRS2009SB13	03/02/2005	N	NRS2009SB13-R01	32 J
NRS2009SB14	03/02/2005	N	NRS2009SB14-R01	78.9 J
NRS2009SB2	03/04/2005	N	NRS2009SB2-R01	3.1
NRS2009SB3	03/03/2005	N	NRS2009SB3-R01	14.9
NRS2009SB4	03/02/2005	N	NRS2009SB4-R01	267 J
NRS2009SB5	03/03/2005	N	NRS2009SB5-R01	65.9 J
NRS2009SB6	03/03/2005	N	NRS2009SB6-R01	51.5 J
NRS2009SB7	03/03/2005	FD	NRS2009FD3P-0205	51 J
NRS2009SB7	03/03/2005	N	NRS2009SB7-R01	13 J
NRS2009SB8	03/02/2005	N	NRS2009SB8-R01	153 J
NRS2009SB9	03/02/2005	N	NRS2009SB9-R01	39.6 J
NRS2009SS1	03/07/2005	N	NRS2009SS1-R01	12.5
NRS2009SS2	03/07/2005	N	NRS2009SS2-R01	10.9
NRS2009SS3	03/07/2005	FD	NRS2009FD2P-0205	12.5
NRS2009SS3	03/07/2005	N	NRS2009SS3-R01	7.5
NRS2009SS4	03/07/2005	N	NRS2009SS4-R01	24.2
NRS2009SS5	03/07/2005	N	NRS2009SS5-R01	14
NRS2009SS6	03/07/2005	N	NRS2009SS6-R01	35.8
NRS2009SS7	03/07/2005	N	NRS2009SS7-R01	28
NRS2009SB04	06/08/2006	N	NRS2009SB04-S2	2.7 UJ
NRS2009SB04	06/08/2006	N	NRS2009SB04-S3	2.6 U
NRS2009SB08	06/08/2006	N	NRS2009SB08-S2	2.9 UJ
NRS2009SB08	06/08/2006	N	NRS2009SB08-S3	2.8 U
NRS2009SB10	06/08/2006	N	NRS2009SB10-S2	66.2 =
NRS2009SB10	06/08/2006	N	NRS2009SB10-S3	2.7 U

EXHIBIT 3-7
TRPH Soil Sampling Results in DRMO Building 2009 Area
U.S. Naval Activity Puerto Rico

Station ID	Sample Collection Date	Sample Type	Sample ID	TRPH Concentration (mg/kg)
NRS2009SB15	06/08/2006	N	NRS2009SB15-S1	15.5 =
NRS2009SB15	06/08/2006	N	NRS2009SB15-S3	6.7 =
NRS2009SB16	06/06/2006	N	NRS2009SB16-S1	4.3 =
NRS2009SB16	06/06/2006	N	NRS2009SB16-S3	2.8 U
NRS2009SB17	06/06/2006	N	NRS2009SB17-S1	2.3 U
NRS2009SB17	06/06/2006	N	NRS2009SB17-S3	2.8 U
NRS2009SB18	06/07/2006	FD	NRS2009FD01-S3	2.7 U
NRS2009SB18	06/07/2006	N	NRS2009SB18-S1	188 J
NRS2009SB18	06/07/2006	N	NRS2009SB18-S3	3.9 =
NRS2009SB19	06/08/2006	FD	NRS2009FD02-S3	4 =
NRS2009SB19	06/06/2006	N	NRS2009SB19-S1	116 J
NRS2009SB19	06/08/2006	N	NRS2009SB19-S3	3 U
NRS2009SB20	06/07/2006	N	NRS2009SB20-S1	130 =
NRS2009SB20	06/08/2006	N	NRS2009SB20-S3	21.2 =
NRS2009SB21	06/08/2006	N	NRS2009SB21-S1	12 =
NRS2009SB21	06/08/2006	N	NRS2009SB21-S3	3.2 =
NRS2009SB22	06/08/2006	N	NRS2009SB22-S1	238 =

Notes:
[a] Background sample results for 1999 collection date can be found in *Corrective Measures Study Investigation Report for SWMU 9* (Baker Environmental, Inc., April 25, 2003).
Field duplicates are included in this table for comparison purposes and are not included in the statistical analysis.
mg/kg = milligrams per kilogram
N = Native sample
FD = Field duplicate sample
J = Estimated concentration
U = Undetected. Not detected above method detection limit.
UJ = Undetected, Reporting Limit Estimated

EXHIBIT 3-8
Statistical Evaluation of Building 2009 Area Soil TRPH Concentrations
U.S. Naval Activitiy Puerto Rico

Parameter	Number Analyzed	Number Detected	Minimum DL	Minimum RL	Min Detected	Max Detected	Mean Value	Median	Standard Deviation	90th Percentile	95th Percentile	Normality Probability	Lognormality Probability	95% UCL (of the mean)[a]	EQB TRPH Criteria[b]	Exceedance[c]
Total Petroleum Hydrocarbons C10-C28 (DRO)	71	62	1.3	2	3	267	34.7	16	51.9	78.9	153	0.000	0.078	44.8	100	No

Notes:
[a] site data calculated as the 95% Upper Confidence Limit (UCL_{95}):

$$UCL = \bar{x} + t\left(\frac{s}{\sqrt{n}}\right)$$

For normally distributed data

$$UCL = e^{\left(\bar{x}+0.5s^2+sH/\sqrt{n-1}\right)}$$

For lognormally distributed data

Where:
UCL = Upper confidence limit
x = mean of the untransformed data
t = student-t statistic (e.g., from Table A2 published in Gilbert, 1987)
s = standard deviation of untransformed data
n = number of samples

[b] TRPH value derived from Criterion from *Commonwealth Government of Puerto Rico, Office of the Governor,* Environmental Quality Board, Water Quality Area (November 7, 1990, Amendments 2002)

[c] Exceedance of closure standard for soil is based on the 95% UCL for TRPH exceeding the RBC value.

For data sets containing nondetected values, mean concentration was calculated using ½ of the minimum detection limit value.
Data evaluated only includes normal samples. (Duplicate QC samples were not included.)
Concentrations reported in milligrams per kilogram (mg/kg)

$$UCL = e^{\left(\bar{x}+0.5s^2+sH/\sqrt{n-1}\right)} \qquad (2)$$

Where:

UCL	=	upper confidence limit
e	=	constant (base of the natural log, equal to 2.718)
$\bar{x}$	=	mean of the log-transformed data
s	=	standard deviation of the log-transformed data
H	=	H-statistic (Table A12 in Gilbert, 1987)
n	=	number of samples

The calculation of the 95% UCL of the Building 2009 area soil TRPH concentrations is shown in Exhibit 3-8. As shown, the 95% UCL is 44.8 mg/kg TRPH, which is significantly less than the TRPH clean closure standard of 100 mg/kg.

3.3 Data Validation and Quality Evaluation

The contract analytical laboratory (PEL Laboratories, Inc.) used EPA SW846 methods for the soil analyses. Third party validation of the analytical data was performed by Validata Chemical Services, Inc., as the first step in the data quality evaluation (DQE) process. The data validation was performed at a QC Level IV, with review of all analytical raw data. The validation was performed in accordance with EPA Region 2 guidance based on the *Contract Laboratory Program National Functional Guidelines for Evaluating Inorganic Data Review* (EPA, 2004b) and *National Functional Guidelines for Organic Data Review* (EPA, 1999). This review was independent of the laboratory's checks and focused on the usability of the data.

Additionally, the data validation included review of hard copy data packages using EPA's modifications for SW846 methods relative to the *Functional Guidelines*. The data validation subcontractor completed and provided an EPA Region 2 data validation workbook for each laboratory data package and method, which also included marked-up Form I qualifiers, an executive summary report, and the laboratory electronic data deliverable (EDD) populated with the validation qualifiers and sub-qualifiers. The complete data validation report is included in Appendix B.

Following the data validation process, the entire data set was reviewed for analyte frequencies of detection, dilution factors that might affect data usability, and patterns of target analyte distribution (as the second step of the DQE process). The data set was also evaluated to identify potential data limitations, uncertainties, or both in the analytical results.

The results of the DQE are presented in a Technical Memorandum provided in Appendix C, which includes an overall assessment of the precision, accuracy, representativeness, completeness and comparability (PARCC) of the data. As presented in this Technical Memorandum, the conclusion of the DQE was that all objectives of the closure sampling data were met, and that the data can be used in the project decision-making process as qualified.

SECTION 4

Conclusions and Recommendations

4.1 Conclusions

As described in Section 3, the calculated 95% UTL for the background arsenic data set was 3.70 mg/kg. Because the 95% UTL for the background arsenic data set exceeds the EPA Region 3 RBC for arsenic (1.91 mg/kg), the background level of 3.70 mg/kg is the clean closure standard for arsenic.

The 95% UCL for arsenic for the Building 2009 area (including former Buildings 2009A, 2009B, 2009C, and 2009D) was 5.49 mg/kg, which exceeds the background level of 3.70 mg/kg. Therefore, this indicates that the clean closure standard for arsenic has not been met, and further evaluation of the site arsenic concentrations is warranted to determine whether the site concentrations pose an unacceptable risk to human health based on future industrial land use.

The calculated 95% UCL for TRPH (DRO) for the Building 2009 area was 44.8 mg/kg, which is less than the TRPH clean closure standard of 100 mg/kg. Therefore, in accordance with the EPA-approved Phase II Closure SAP, this demonstrates that the clean closure standard for TRPH for future industrial land use has been met for the Building 2009 area.

Although some TRPH (DRO) concentrations at the site exceed the 100 mg/kg closure standard, these elevated levels are limited to the soil samples collected from directly beneath the concrete pavement at the site. None of the samples collected from the 1 to 2 ft and 2 to 3 ft depth intervals had TRPH concentrations exceeding 100 mg/kg. Also, a dense clay deposit was found in all of the soil delineation borings at a depth of 6 to 14 inches below the bottom of concrete pavement. This clay layer serves as a barrier to potential migration of TRPH to underlying groundwater.

4.2 Recommendations

Based on the conclusions drawn from the results of the initial and Phase II closure sampling activities, performance of a site-specific risk assessment of Building 2009 and surrounding area is recommended to address the elevated arsenic concentrations in the site soils, as well as the elevated arsenic and TRPH concentrations in the concrete floor samples collected from Building 2009. The objective of the risk assessment will be to determine whether the elevated arsenic concentrations in the site soils and the elevated arsenic and TRPH concentrations in the concrete floor samples collected from Building 2009 present unacceptable risks to human health based on future industrial use of Building 2009 and the surrounding area. The site-specific risk assessment will be performed in accordance with the EPA-approved *Site-Specific Risk Assessment Work Plan, Buildings 2009, 2009A, 2009B, 2009C, and 2009D, Defense Reutilization and Marketing Office, U.S. Naval Activity, Puerto Rico, Ceiba, Puerto Rico* (JV I, 2006b).

SECTION 5

References

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Appendixes

APPENDIX A

Laboratory Analytical Data

Pace Analytical, Inc.
Puerto Rico Laboratory
El Retiro Industrial Zone
Calle B&C, P.O. Box 325
San German, PR 00683

Phone: 787.892.2650
Fax: 787.892.1054

August 23, 2006

Mr. Brian Spann
PEL Laboratories, Inc.
4420 Pendola Point Road
Tampa, F.L. 33619

RE: Project: NAPR DRMO 315616.AC.FI
Laboratory Submission Number / SDG: 2504064 R4

Dear Mr. Spann:

I certify that the contents of this package were verified and found technically complete. On this project the following twenty (20) Soil Samples were evaluated:

NRS2009SB04-S2, NRS2009SB04-S3, NRS2009SB08-S2, NRS2009SB08-S3, NRS2009SB08-S3 MS, NRS2009SB08-S3 MSD, NRS2009SB10-S2, NRS2009SB10-S3, NRS2009SB10-S3 MS, NRS2009SB10-S3 MSD, NRS2009SB15-S1, NRS2009SB15-S3, NRS2009SB16-S1, NRS2009SB16-S3, NRS2009SB17-S1, NRS2009SB17-S3, NRS2009SB18-S1, NRS2009SB18-S3, NRS2009FD01-S3, NRS2009SB19-S1

Samples were prepared by method SW846 EPA 3550C for DRO 8015 semi-volatiles analysis and analyzed for Diesel Range Organics fraction for DRO by Method EPA SW846 Modified 8015 analyte Range C10-C28.

Certified by:

Sandra Laboy, QA Analyst
Chemist License 4122

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Lic. Sandra Y. Laboy Olivieri
Lic.# 4122
A 1099334
QUIMICO LICENCIADO

Should you have any questions regarding this package verification, please contact us at 787-892-2680.

Milton Martínez
Project Manager
Pace Analytical, Inc.

PEL Laboratories, Inc.

Customer Name:	CH2M Hill
Date and Time Received:	6/10/2006 9:30:00 AM
Date Reported:	7/5/2006
Laboratory Submission Number/SDG:	2504064
Project:	NAPR DRMO 315616.AC.FI

Samples: The submission consisted of 20 samples with sample identification shown in the attached data tables.

Tests: The samples were analyzed for the methods listed on the attached table of contents.

Results: See the attached data tables for results.

Distribution of Report to:

CH2M Hill
Attn: Kevin Sanders
Phone: W 352-335-5877

Respectfully submitted,

Brian Spann
Laboratory Manager
PEL Laboratories, Inc.

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. PEL letters and reports are for the exclusive use of the client to whom they are addressed. Our Letters and reports apply to the sample tested and are n necessarily indicative of the qualities of apparently identical or similar materials

4420 Pendola Point Road • Tampa, Florida 33619
(813)247-2805 • FAX: (813)248-1537
Website: www.pelab.com

Organics 7
METHOD 8015 GC 8015 DRO ORGANICS..... 10
Sample Data 17
QC Summary 50
Standards Data 71

Chain of Custody Documentation 94

Addendum 100

EXECUTIVE SUMMARY - Detection Highlights

2504064

SAMPLE ID: NRS2009FD01-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	9 B	2.7	MG/KG	SW8015-E

SAMPLE ID: NRS2009FD01-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	7 B	2.7	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB04-S2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	9.5 B	2.7	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB04-S2RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	5.3 B	2.7	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB04-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	5.4 B	2.6	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB04-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	4.7 B	2.6	MG/KG	SW8015-E

050706 950

EXECUTIVE SUMMARY - Detection Highlights

2504064

SAMPLE ID: NRS2009SB08-S2RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	66.4 B	2.9	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB08-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	3.3 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB08-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	15 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB10-S2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	72 B	2.3	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB10-S2RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	118 B	11.6	MG/KG	SW8015-E

050706 950

EXECUTIVE SUMMARY - Detection Highlights

2504064

SAMPLE ID: NRS2009SB10-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	2.4 JB	2.7	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB10-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	26.8 B	2.6	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB15-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	22.5 B	2.2	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB15-S1RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	17.4 B	2.2	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB15-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	15.8 B	2.7	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB15-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	9.3 B	2.7	MG/KG	SW8015-E

050706 950

EXECUTIVE SUMMARY - Detection Highlights

2504064

SAMPLE ID: NRS2009SB16-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	12.5 B	2.4	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB16-S1RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	14.5 B	2.4	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB16-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	6.1 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB16-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	10.5 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB17-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	7.1 B	2.3	MG/KG	SW8015-E

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EXECUTIVE SUMMARY - Detection Highlights

2504064

SAMPLE ID: NRS2009SB17-S1RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	13.5 B	2.2	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB17-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	4.1 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB17-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	8.6 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB18-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	190 B	2.3	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB18-S1RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	87.6 B	11.4	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB18-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	13.4 B	2.8	MG/KG	SW8015-E

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EXECUTIVE SUMMARY - Detection Highlights

2504064

SAMPLE ID: NRS2009SB18-S3RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	9 B	2.8	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB19-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	120 B	2.3	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB19-S1RE

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	200 B	11.3	MG/KG	SW8015-E

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Organics

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Organic Data Qualifiers

U Indicates the analyte was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that analyte. The reporting limit can vary from sample to sample depending on dilution factors or the percent moisture adjustment when indicated.

J Indicates estimated value. It is used when the data indicates the presence of an analyte above the method detection limit (MDL) yet lower than the reporting limit.

B Indicates the analyte was found in the associated blank as well as in the sample. The notation indicates possible contamination of the sample.

E Indicates the value reported is above the highest calibration standard for that analyte. The sample should be analyzed at an appropriate dilution. "E" qualified values are estimations and the diluted result may be reported on another Form 1.

D Indicates the analyte has been identified in a dilution reanalysis. "D" qualifiers are used for samples that have been analyzed at a lesser dilution than required for accurate quantitation.

C The "C" qualifier indicates the presence of this analyte has been confirmed by GC/MS analysis.

P This qualifier is used for pesticide / Aroclor target analytes where there is greater than 25% difference for the detected concentration between the two GC columns.

N This qualifier indicates presumptive evidence of an analyte. This qualifier is only used for tentatively identified compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

X Data flagged as rejected by analyst utilizing analytical judgement.

050706 950

Organic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for organic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

050706 950

GC 8015 DRO ORGANICS

METHOD 8015

050706 950

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504064

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: The following samples were prepped out of hold: NRS2009FD01-S3RE, NRS2009SB04-S2RE, NRS2009SB04-S3RE, NRS2009SB08-S2RE, NRS2009SB08-S3RE, NRS2009SB08-S3REMS, NRS2009SB08-S3RESD, NRS2009SB10-S2RE, NRS2009SB10-S3RE, NRS2009SB10-S3REMS, NRS2009SB10-S3RESD, NRS2009SB15-S1RE, NRS2009SB15-S3RE, NRS2009SB16-S1RE, NRS2009SB16-S3RE, NRS2009SB17-S1RE, NRS2009SB17-S3RE, NRS2009SB18-S1RE, NRS2009SB18-S3RE, NRS2009SB19-S1RE The entire sample set was re-extracted for re-analysis, both sets of data are reported.

B. Sample Analysis: All holding times were met.

III. METHODS

EPA SW846 Modified 8015
Analyte range C10-C28

IV. PREPARATION

Soil samples were prepared by SW846 EPA 3550C for DRO 8015 semi-volatiles analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met with the exception of:
Blank 11110MBK was analyzed with the soil samples extracted on 06/14/06. The following analyte(s) were detected below RL: TPH C10-C28 at 1.8 MG/KG. Analyte found in blank less is less then the reporting limit.

Blank 11192MBK was analyzed with the soil samples extracted on 06/29/06. The following analyte(s) were detected below RL: TPH C10-C28 at 1.9 MG/KG. Analyte found in blank less is less then the reporting limit.
Samples coded accordingly.

C. Surrogates:

All acceptance criteria were met with the exception of:

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504064

Client: CH2M Hill

Sample NRS2009SB04-S2 was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 42.2 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported.

Sample NRS2009SB04-S2RE was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 44.4 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB08-S2 was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 13.4 % with criteria of (47-142), Triacontane at 14.4 % with criteria of (30-150). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB08-S3RESD was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 46.8 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB15-S3RE was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 46.1 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB17-S1 was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 44.7 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB17-S3 was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 45.2 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB18-S1 was recovered above criteria for the following surrogate(s): Triacontane at 421 % with criteria of (30-150). Sample matrix causing interference with the recovery Sample was re-extracted and both sets of data are reported

Sample NRS2009SB18-S1RE was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 30.3 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB18-S3 was recovered below criteria for the following surrogate(s): o-Terphenyl Surrogate at 43 % with criteria of (47-142). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Sample NRS2009SB19-S1 was recovered above criteria for the following surrogate(s): Triacontane at 251 % with criteria of (30-150). Sample matrix causing interference with the recovery. Sample was re-extracted and both sets of data are reported

Samples coded accordingly.

PEL Lab Reference No./SDG: 2504064

Client: CH2M Hill

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:
LCS 11110LCS was analyzed with the soil samples extracted on 06/14/06. The following analyte(s) were recovered below criteria: TPH C10-C28 at 47.4 % with criteria of (51-108). Low recovery which led to batch re-extraction. LCS of re-extracted batch is within QC limits set by the client.

Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

A client requested MS/SD set was analyzed.
All percent recovery and relative percent difference (RPD) criteria were met with the exception of:

SD - NRS2009SB08-S3RESD was analyzed with the soil samples extracted on 06/29/06. The following analyte(s) were recovered below criteria: TPH C10-C28 at 38.7 % with criteria of (53-123). Sample matrix causing interference with the spike recovery. Sample was re-extracted and both sets of data are reported

MS - NRS2009SB10-S3MS was analyzed with the soil samples extracted on 06/14/06. The following analyte(s) were recovered below criteria: TPH C10-C28 at 46.6 % with criteria of (53-123). Sample matrix causing interference with the spike recovery. Sample was re-extracted and both sets of data are reported

SD - NRS2009SB10-S3RESD was analyzed with the soil samples extracted on 06/29/06. The following analyte(s) were recovered above criteria: TPH C10-C28 at 132 % with criteria of (53-123). Sample matrix causing interference with the spike recovery. Sample was re-extracted and both sets of data are reported

SD - NRS2009SB10-S3SD was analyzed with the soil samples extracted on 06/14/06. The following analyte(s) were recovered below criteria: TPH C10-C28 at 47.6 % with criteria of (53-123). Sample matrix causing interference with the spike recovery. Sample was re-extracted and both sets of data are reported

Samples coded accordingly.

E. Internal Standards:

This method does not require the use of internal standards.

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504064

Client: CH2M Hill

F. Samples:

Sample analysis proceeded normally.

Samples NRS2009SB10-S2RE, NRS2009SB18-S1RE required a 1:5 dilution due to high concentration of the following analyte(s):TPH .

Sample NRS2009SB19-S1RE could only be brought to a final volume of 5mL. It was attempted to bring the extract to a final volume of 1mL, however due to the nature of the sample PEL was unable to achieve a lower volume than the 5mL final volume that is reported.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and PEL, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: **DATE: 07/03/2006**

W:\Narratives\SemiVols\2504\2504064_8015.doc

8015 DRO ORGANIC CROSS REFERENCE TABLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Method: 8015

EPA Sample No	Lab Sample ID
NRS2009SB04-S2	250406401
NRS2009SB04-S2RE	250406401RE
NRS2009SB04-S3	250406402
NRS2009SB04-S3RE	250406402RE
NRS2009SB08-S2	250406403
NRS2009SB08-S2RE	250406403RE
NRS2009SB08-S3	250406404
NRS2009SB08-S3RE	250406404RE
NRS2009SB10-S2	250406407
NRS2009SB10-S2RE	250406407RE
NRS2009SB10-S3	250406408
NRS2009SB10-S3RE	250406408RE
NRS2009SB15-S1	250406411
NRS2009SB15-S1RE	250406411RE
NRS2009SB15-S3	250406412
NRS2009SB15-S3RE	250406412RE
NRS2009SB16-S1	250406413
NRS2009SB16-S1RE	250406413RE
NRS2009SB16-S3	250406414
NRS2009SB16-S3RE	250406414RE
NRS2009SB17-S1	250406415
NRS2009SB17-S1RE	250406415RE
NRS2009SB17-S3	250406416
NRS2009SB17-S3RE	250406416RE
NRS2009SB18-S1	250406417
NRS2009SB18-S1RE	250406417RE
NRS2009SB18-S3	250406418
NRS2009SB18-S3RE	250406418RE
NRS2009FD01-S3	250406419
NRS2009FD01-S3RE	250406419RE
NRS2009SB19-S1	250406420

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8015 DRO ORGANIC CROSS REFERENCE TABLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Method: 8015

EPA Sample No	Lab Sample ID
NRS2009SB19-S1RE	250406420RE

050706 950

Sample Data

050706 950

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S2

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406401 Lab File ID: 64-1.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0032

PercentSolids: 73.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	9.5	B

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Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S2RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406401RE Lab File ID: 64-1.D

Sample wt/vol: 15.05 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2117

PercentSolids: 73.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	5.3	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406402 Lab File ID: 64-2.D

Sample wt/vol: 15.06 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0102

PercentSolids: 74.9 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	5.4	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406402RE Lab File ID: 64-2.D

Sample wt/vol: 15.08 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2148

PercentSolids: 74.9 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	4.7	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S2

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406403 Lab File ID: 64-3.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0133

PercentSolids: 68.2 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.9	U

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Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S2RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406403RE Lab File ID: 64-3.D

Sample wt/vol: 15.22 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2218

PercentSolids: 68.2 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	66.4	B

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Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406404 Lab File ID: 64-4.D

Sample wt/vol: 15.15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/15/06 Time: 1253

PercentSolids: 70 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	3.3	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406404RE Lab File ID: 64-4.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2248

PercentSolids: 70 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	15	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S2

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406407 Lab File ID: 64-7.D

Sample wt/vol: 15.05 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0203

PercentSolids: 86.2 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	72	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S2RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406407RE Lab File ID: 64-7d5.D

Sample wt/vol: 15.02 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0019

PercentSolids: 86.2 decanted : Dilution Factor: 5

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	118	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406408 Lab File ID: 64-8.D

Sample wt/vol: 15.1 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/15/06 Time: 1525

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.4	JB

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406408RE Lab File ID: 64-8.D

Sample wt/vol: 15.23 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0221

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	26.8	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406411 Lab File ID: 64-11.D

Sample wt/vol: 15.22 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0303

PercentSolids: 91.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	22.5	B

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406411RE Lab File ID: 64-11.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0352

PercentSolids: 91.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	17.4	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406412 Lab File ID: 64-12.D

Sample wt/vol: 15.02 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0333

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	15.8	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406412RE Lab File ID: 64-12.D

Sample wt/vol: 15.01 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0422

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	9.3	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406413 Lab File ID: 64-13.D

Sample wt/vol: 15.06 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0403

PercentSolids: 82.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	12.5	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406413RE Lab File ID: 64-13.D

Sample wt/vol: 15.09 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0452

PercentSolids: 82.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	14.5	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406414 Lab File ID: 64-14.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0434

PercentSolids: 71.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	6.1	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406414RE Lab File ID: 64-14.D

Sample wt/vol: 15.16 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0523

PercentSolids: 71.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	10.5	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406415 Lab File ID: 64-15.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0534

PercentSolids: 87.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	7.1	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406415RE Lab File ID: 64-15.D

Sample wt/vol: 15.16 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0553

PercentSolids: 87.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	13.5	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406416 Lab File ID: 64-16.D

Sample wt/vol: 15.04 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0605

PercentSolids: 71.4 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	4.1	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406416RE Lab File ID: 64-16.D

Sample wt/vol: 15.14 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0623

PercentSolids: 71.4 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	8.6	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406417 Lab File ID: 64-17.D

Sample wt/vol: 15.17 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0635

PercentSolids: 87.1 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	190	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406417RE Lab File ID: 64-17d5.D

Sample wt/vol: 15.14 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0823

PercentSolids: 87.1 decanted : Dilution Factor: 5

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	87.6	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406418 Lab File ID: 64-18.D

Sample wt/vol: 15.07 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0736

PercentSolids: 71.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	13.4	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406418RE Lab File ID: 64-18.D

Sample wt/vol: 15.01 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0853

PercentSolids: 71.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	9	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD01-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406419 Lab File ID: 64-19.D

Sample wt/vol: 15.08 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0806

PercentSolids: 73.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	9	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD01-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406419RE Lab File ID: 64-19.D

Sample wt/vol: 15.04 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0924

PercentSolids: 73.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	7	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB19-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406420 Lab File ID: 64-20.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0836

PercentSolids: 88 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	120	B

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB19-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406420RE Lab File ID: 64-20.D

Sample wt/vol: 15.09 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 5 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0954

PercentSolids: 88 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	200	B

050706 950

Form I

QC Summary

050706 950

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

11110MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 215654 Lab File ID: 11110MBK.D

Sample wt/vol: 15 Units: G Date Received: 06/14/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/15/06 Time: 1152

PercentSolids: 100 decanted : Dilution Factor: 1

Extraction: SONC Station ID: Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	1.8	J

050706 950

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

11192MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 217046 Lab File ID: 11192MBK.D

Sample wt/vol: 15 Units: G Date Received: 06/29/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2016

PercentSolids: 100 decanted : Dilution Factor: 1

Extraction: SONC Station ID: Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	1.9	J

050706 950

Form I

4

8015 DRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

11110MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Lab File ID: 11110MBK.D Lab Sample ID: 215654

Instrument ID: SFID02 Date Extracted: 06/14/06

Matrix: SOIL Date Analyzed: 06/15/06

Level:(low/med) LOW Time Analyzed: 1152

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	11110LCS	215655	11110LCS.D	06/15/06	1223
2	NRS2009SB08-S3	250406404	64-4.D	06/15/06	1253
3	NRS2009SB08-S3MS	250406405	64-4MS.D	06/15/06	1323
4	NRS2009SB08-S3SD	250406406	64-4SD.D	06/15/06	1455
5	NRS2009SB10-S3	250406408	64-8.D	06/15/06	1525
6	NRS2009SB10-S3MS	250406409	64-8MS.D	06/15/06	1556
7	NRS2009SB10-S3SD	250406410	64-8SD.D	06/16/06	0002
8	NRS2009SB04-S2	250406401	64-1.D	06/16/06	0032
9	NRS2009SB04-S3	250406402	64-2.D	06/16/06	0102
10	NRS2009SB08-S2	250406403	64-3.D	06/16/06	0133
11	NRS2009SB10-S2	250406407	64-7.D	06/16/06	0203
12	NRS2009SB15-S1	250406411	64-11.D	06/16/06	0303
13	NRS2009SB15-S3	250406412	64-12.D	06/16/06	0333
14	NRS2009SB16-S1	250406413	64-13.D	06/16/06	0403
15	NRS2009SB16-S3	250406414	64-14.D	06/16/06	0434
16	NRS2009SB17-S1	250406415	64-15.D	06/16/06	0534
17	NRS2009SB17-S3	250406416	64-16.D	06/16/06	0605
18	NRS2009SB18-S1	250406417	64-17.D	06/16/06	0635
19	NRS2009SB18-S3	250406418	64-18.D	06/16/06	0736
20	NRS2009FD01-S3	250406419	64-19.D	06/16/06	0806
21	NRS2009SB19-S1	250406420	64-20.D	06/16/06	0836

COMMENTS:

8015 DRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.: 11192MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Lab File ID: 11192MBK.D Lab Sample ID: 217046

Instrument ID: SFID02 Date Extracted: 06/29/06

Matrix: SOIL Date Analyzed: 06/30/06

Level:(low/med) LOW Time Analyzed: 2016

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	11192LCS	217047	11192LCS.D	06/30/06	2047
2	NRS2009SB04-S2RE	250406401RE	64-1.D	06/30/06	2117
3	NRS2009SB04-S3RE	250406402RE	64-2.D	06/30/06	2148
4	NRS2009SB08-S2RE	250406403RE	64-3.D	06/30/06	2218
5	NRS2009SB08-S3RE	250406404RE	64-4.D	06/30/06	2248
6	NRS2009SB08-S3REMS	250406405RE	64-5.D	06/30/06	2319
7	NRS2009SB08-S3RESD	250406406RE	64-6.D	06/30/06	2349
8	NRS2009SB10-S2RE	250406407RE	64-7d5.D	07/01/06	0019
9	NRS2009SB10-S3RE	250406408RE	64-8.D	07/01/06	0221
10	NRS2009SB10-S3REMS	250406409RE	64-9.D	07/01/06	0251
11	NRS2009SB10-S3RESD	250406410RE	64-10.D	07/01/06	0321
12	NRS2009SB15-S1RE	250406411RE	64-11.D	07/01/06	0352
13	NRS2009SB15-S3RE	250406412RE	64-12.D	07/01/06	0422
14	NRS2009SB16-S1RE	250406413RE	64-13.D	07/01/06	0452
15	NRS2009SB16-S3RE	250406414RE	64-14.D	07/01/06	0523
16	NRS2009SB17-S1RE	250406415RE	64-15.D	07/01/06	0553
17	NRS2009SB17-S3RE	250406416RE	64-16.D	07/01/06	0623
18	NRS2009SB18-S1RE	250406417RE	64-17d5.D	07/01/06	0823
19	NRS2009SB18-S3RE	250406418RE	64-18.D	07/01/06	0853
20	NRS2009FD01-S3RE	250406419RE	64-19.D	07/01/06	0924
21	NRS2009SB19-S1RE	250406420RE	64-20.D	07/01/06	0954

COMMENTS:

2A

SOIL 8015 DRO ORGANIC SURROGATE RECOVERY

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG NO.: 2504064

Column(1): RTX-5 ID: 0.53 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
11110LCS	56.4	47.8					0
11110MBK	66.9	59.7					0
11192LCS	82.7	61.2					0
11192MBK	86.5	50.7					0
NRS2009FD01-S3	91.2	47.8					0
NRS2009FD01-S3RE	76.8	51.6					0
NRS2009SB04-S2	57.0	42.2 *					1
NRS2009SB04-S2RE	53.9	44.4 *					1
NRS2009SB04-S3	69.5	49.4					0
NRS2009SB04-S3RE	63.3	47.7					0
NRS2009SB08-S2	14.4 *	13.4 *					2
NRS2009SB08-S2RE	68.8	65.6					0
NRS2009SB08-S3	84.0	75.5					0
NRS2009SB08-S3MS	57.7	57.4					0
NRS2009SB08-S3RE	69.8	55.3					0
NRS2009SB08-S3REMS	85.7	73.4					0
NRS2009SB08-S3RESD	49.2	46.8 *					1
NRS2009SB08-S3SD	64.2	58.9					0
NRS2009SB10-S2	66.9	77.9					0
NRS2009SB10-S2RE	65.6	58.4					0
NRS2009SB10-S3	67.2	52.8					0
NRS2009SB10-S3MS	66.3	59.6					0
NRS2009SB10-S3RE	77.8	67.0					0
NRS2009SB10-S3REMS	71.0	62.5					0

Control Limits

S1	=	Triacontane	30 -	150
S2	=	o-Terphenyl Surrogate	47 -	142

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

050706 950

2A

SOIL 8015 DRO ORGANIC SURROGATE RECOVERY

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG NO.: 2504064

Column(1): RTX-5 ID: 0.53 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
NRS2009SB10-S3RESD	71.3	66.3					0
NRS2009SB10-S3SD	69.3	65.9					0
NRS2009SB15-S1	76.4	61.1					0
NRS2009SB15-S1RE	57.2	50.0					0
NRS2009SB15-S3	80.9	66.3					0
NRS2009SB15-S3RE	56.2	46.1 *					1
NRS2009SB16-S1	67.1	56.2					0
NRS2009SB16-S1RE	80.0	70.0					0
NRS2009SB16-S3	66.8	53.8					0
NRS2009SB16-S3RE	90.3	77.2					0
NRS2009SB17-S1	54.6	44.7 *					1
NRS2009SB17-S1RE	64.0	57.3					0
NRS2009SB17-S3	68.8	45.2 *					1
NRS2009SB17-S3RE	58.4	55.4					0
NRS2009SB18-S1	421.0 *	121.0					1
NRS2009SB18-S1RE	32.9	30.3 *					1
NRS2009SB18-S3	123.0	43.0 *					1
NRS2009SB18-S3RE	61.8	52.7					0
NRS2009SB19-S1	251.0 *	84.2					1
NRS2009SB19-S1RE	86.0	77.3					0

Control Limits

S1	=	Triacontane	30	-	150
S2	=	o-Terphenyl Surrogate	47	-	142

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

050706 950

8015 DRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 06/01/06

Instrument ID: SFID02

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 7.69 S2 : 4.92

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
1	STD403440	12785	CAL6.D	06/01/06	1828	7.64	4.9
2	STD403439	12784	CAL5.D	06/01/06	1859	7.66	4.91
3	STD403438	12783	CAL4.D	06/01/06	1929	7.69	4.92
4	STD403437	12782	CAL3.D	06/01/06	1959	7.65	4.9
5	STD403436	12781	CAL2.D	06/01/06	2029	7.66	4.9
6	STD403435	12780	CA1.D	06/01/06	2100	7.67	4.91
7	SSC404093	12786	SECCCV.D	06/01/06	2130	7.65	4.91
8	CCV407000	12786	DROCCV5.D	06/15/06	0921	7.7	4.89
9	11110MBK	215654	11110MBK.D	06/15/06	1152	7.66	4.87
10	11110LCS	215655	11110LCS.D	06/15/06	1223	7.61	4.85
11	NRS2009SB08-S3	250406404	64-4.D	06/15/06	1253	7.66	4.86
12	NRS2009SB08-S3MS	250406405	64-4MS.D	06/15/06	1323	7.63	4.85
13	CCV407001	12786	DROCCV5B.D	06/15/06	1424	7.69	4.88
14	NRS2009SB08-S3SD	250406406	64-4SD.D	06/15/06	1455	7.66	4.86
15	NRS2009SB10-S3	250406408	64-8.D	06/15/06	1525	7.59	4.84
16	NRS2009SB10-S3MS	250406409	64-8MS.D	06/15/06	1556	7.58	4.84
17	CCV408210	12786	DROCCV6.D	06/15/06	1626	7.59	4.83
18	CCV408211	12786	DROCCV6A.D	06/15/06	2331	7.61	4.85
19	NRS2009SB10-S3SD	250406410	64-8SD.D	06/16/06	0002	7.61	4.84
20	NRS2009SB04-S2	250406401	64-1.D	06/16/06	0032	7.54	4.83
21	NRS2009SB04-S3	250406402	64-2.D	06/16/06	0102	7.62	4.85
22	NRS2009SB08-S2	250406403	64-3.D	06/16/06	0133	7.58	4.84
23	NRS2009SB10-S2	250406407	64-7.D	06/16/06	0203	7.64	4.85
24	NRS2009SB15-S1	250406411	64-11.D	06/16/06	0303	7.55	4.82
25	NRS2009SB15-S3	250406412	64-12.D	06/16/06	0333	7.59	4.84
26	NRS2009SB16-S1	250406413	64-13.D	06/16/06	0403	7.58	4.84

			QC LIMITS
S1	=	Triacontane	(+/- 0.15 MINUTES)
S2	=	o-Terphenyl Surrogate	(+/- 0.1 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

Page 1 of 4

050706 950 FORM VIII

8015 DRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 06/01/06

Instrument ID: SFID02

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 7.69 S2 : 4.92

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
27	NRS2009SB16-S3	250406414	64-14.D	06/16/06	0434	7.62	4.85
28	CCV408212	12786	DROCCV7.D	06/16/06	0504	7.58	4.84
29	NRS2009SB17-S1	250406415	64-15.D	06/16/06	0534	7.62	4.87
30	NRS2009SB17-S3	250406416	64-16.D	06/16/06	0605	7.62	4.85
31	NRS2009SB18-S1	250406417	64-17.D	06/16/06	0635	7.59	4.84
32	NRS2009SB18-S3	250406418	64-18.D	06/16/06	0736	7.61	4.85
33	NRS2009FD01-S3	250406419	64-19.D	06/16/06	0806	7.66	4.87
34	NRS2009SB19-S1	250406420	64-20.D	06/16/06	0836	7.62	4.86
35	CCV408213	12786	DROCCV8.D	06/16/06	0937	7.67	4.87

			QC LIMITS
S1	=	Triacontane	(+/- 0.15 MINUTES)
S2	=	o-Terphenyl Surrogate	(+/- 0.1 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

8015 DRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 06/30/06

Instrument ID: SFID02

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 7.57 S2 : 4.8

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	S2 RT	#
1	STD413162	13288	DCAL1.D	06/30/06	1005	7.54		4.79	
2	STD413163	13289	DCAL2.D	06/30/06	1035	7.54		4.78	
3	STD413164	13290	DCAL3.D	06/30/06	1105	7.54		4.79	
4	STD413165	13291	DCAL4.D	06/30/06	1135	7.57		4.8	
5	STD413166	13292	DCAL5.D	06/30/06	1206	7.59		4.8	
6	STD413167	13293	DCAL6.D	06/30/06	1236	7.59		4.8	
7	SSC413170	13294	DSECCV.D	06/30/06	1307	7.53		4.78	
8	CCV413169	13291	DCCVB21.D	06/30/06	1845	7.49		4.77	
9	11192MBK	217046	11192MBK.D	06/30/06	2016	7.52		4.78	
10	11192LCS	217047	11192LCS.D	06/30/06	2047	7.57		4.79	
11	NRS2009SB04-S2RE	250406401RE	64-1.D	06/30/06	2117	7.49		4.77	
12	NRS2009SB04-S3RE	250406402RE	64-2.D	06/30/06	2148	7.44		4.76	
13	NRS2009SB08-S2RE	250406403RE	64-3.D	06/30/06	2218	7.47		4.76	
14	NRS2009SB08-S3RE	250406404RE	64-4.D	06/30/06	2248	7.44		4.75	
15	NRS2009SB08-S3REMS	250406405RE	64-5.D	06/30/06	2319	7.51		4.77	
16	NRS2009SB08-S3RESD	250406406RE	64-6.D	06/30/06	2349	7.4	*	4.74	
17	NRS2009SB10-S2RE	250406407RE	64-7d5.D	07/01/06	0019	7.47		4.76	
18	CCV413168	13291	DCCV31.D	07/01/06	0050	7.49		4.77	
19	NRS2009SB10-S3RE	250406408RE	64-8.D	07/01/06	0221	7.41	*	4.74	
20	NRS2009SB10-S3REMS	250406409RE	64-9.D	07/01/06	0251	7.41	*	4.75	
21	NRS2009SB10-S3RESD	250406410RE	64-10.D	07/01/06	0321	7.47		4.77	
22	NRS2009SB15-S1RE	250406411RE	64-11.D	07/01/06	0352	7.46		4.76	
23	NRS2009SB15-S3RE	250406412RE	64-12.D	07/01/06	0422	7.52		4.78	
24	NRS2009SB16-S1RE	250406413RE	64-13.D	07/01/06	0452	7.48		4.77	
25	NRS2009SB16-S3RE	250406414RE	64-14.D	07/01/06	0523	7.53		4.78	
26	NRS2009SB17-S1RE	250406415RE	64-15.D	07/01/06	0553	7.5		4.78	

			QC LIMITS
S1	=	Triacontane	(+/- 0.15 MINUTES)
S2	=	o-Terphenyl Surrogate	(+/- 0.1 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

8015 DRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 06/30/06

Instrument ID: SFID02

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 7.57 S2 : 4.8

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
27	NRS2009SB17-S3RE	250406416RE	64-16.D	07/01/06	0623	7.48	4.75
28	CCV413208	13291	DCCV42.D	07/01/06	0723	7.5	4.76
29	NRS2009SB18-S1RE	250406417RE	64-17d5.D	07/01/06	0823	7.44	4.75
30	NRS2009SB18-S3RE	250406418RE	64-18.D	07/01/06	0853	7.54	4.78
31	NRS2009FD01-S3RE	250406419RE	64-19.D	07/01/06	0924	7.57	4.79
32	NRS2009SB19-S1RE	250406420RE	64-20.D	07/01/06	0954	7.54	4.78
33	CCV413209	13291	DCCV52.D	07/01/06	1054	7.52	4.77

			QC LIMITS
S1	=	Triacontane	(+/- 0.15 MINUTES)
S2	=	o-Terphenyl Surrogate	(+/- 0.1 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

3

8015 DRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

11110LCS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	LCS CONCENTRATION MG/KG	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	33.3	15.8	47.4 *		7.0	51 - 108

Spike Recovery: 1 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

050706 950

Form III

3

8015 DRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

11192LCS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	LCS CONCENTRATION MG/KG	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	33.3	26.1	78.4		7.0	51 - 108

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

050706 950

Form III

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616. NRS2009SB08-S3MS

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	SAMPLE CONCENTRATION MG/KG	MS CONCENTRATION MG/KG	MS % REC #	QC LIMITS REC.
TPH C10-C28	47.3	3.3	30.2	56.9	53 - 123

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

NRS2009SB08-S3SD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 3156

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	MSD CONCENTRATION MG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	47.4	29.1	54.4	3.7	30	53 - 123

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616. NRS2009SB08-S3REMS

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	SAMPLE CONCENTRATION MG/KG	MS CONCENTRATION MG/KG	MS % REC #	QC LIMITS REC.
TPH C10-C28	47.2	15	43.4	60.2	53 - 123

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 3156 NRS2009SB08-S3RESD

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	MSD CONCENTRATION MG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	47.3	33.3	38.7 *	26.3	30	53 - 123

RPD: 0 out of 1 outside limits

Spike Recovery: 1 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616. NRS2009SB10-S3MS

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	SAMPLE CONCENTRATION MG/KG	MS CONCENTRATION MG/KG	MS % REC #	QC LIMITS REC.
TPH C10-C28	44.6	2.4	23.2	46.6 *	53 - 123

Spike Recovery: 1 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

NRS2009SB10-S3SD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 3156

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	MSD CONCENTRATION MG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	44.1	23.4	47.6 *	0.9	30	53 - 123

RPD: 0 out of 1 outside limits

Spike Recovery: 1 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616. NRS2009SB10-S3REMS

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	SAMPLE CONCENTRATION MG/KG	MS CONCENTRATION MG/KG	MS % REC #	QC LIMITS REC.
TPH C10-C28	44	26.8	74.4	108.0	53 - 123

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

3

8015 DRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 3156 NRS2009SB10-S3RESD

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

COMPOUND	SPIKE ADDED MG/KG	MSD CONCENTRATION MG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	44.6	85.9	132.0 *	14.3	30	53 - 123

RPD: 0 out of 1 outside limits

Spike Recovery: 1 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

050706 950

Standards Data

050706 950

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1828 End: 2100

LAB FILE ID: RRF0.1 =CA1.D RRF0.025 =CAL2.D
RRF0.5 =CAL3.D RRF1 =CAL4.D RRF2 =CAL5.D

COMPOUND	RRF0.1	RRF0.025	RRF0.5	RRF1	RRF2
TPH C10-C28	73147110	146846480	46321562	37351963	34539972.5
==========					
Triacontane(SURR)	25050245	29375480	33509955	30418405	30058350
o-Terphenyl Surrogate(SURR)	35498240	35967880	42261720	39012530	39414370

050706 950

FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1828 End: 2100

LAB FILE ID: RRF4 =CAL6.D					
COMPOUND	RRF4				
TPH C10-C28	32901952.75				
==========					
Triacontane(SURR)	29756830				
o-Terphenyl Surrogate(SURR)	42433610				

050706 950

FORM VI

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1828 End: 2100

COMPOUND	CURVE	COEFFICIENTS AO	COEFFICIENTS A1	%RSD OR R^2
TPH C10-C28	LINR	-0.1135851	3.093504E-08	0.99781
==========				
Triacontane(SURR)	AVRG		29694877.5	9.1
o-Terphenyl Surrogate(SURR)	AVRG		39098058.3	7.6

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1005 End: 1236

LAB FILE ID: RRF0.025 =DCAL1.D RRF0.1 =DCAL2.D
RRF0.5 =DCAL3.D RRF1 =DCAL4.D RRF2 =DCAL5.D

COMPOUND	RRF0.025	RRF0.1	RRF0.5	RRF1	RRF2
TPH C10-C28	50563440	37149390	40222980	37396481	35971306
==========					
Triacontane(SURR)	32704260	30836925	31395435	32777140	31525595
o-Terphenyl Surrogate(SURR)	38393750	37992440	34811960	37398510	44084260

050706 950

FORM VI

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1005 End: 1236

LAB FILE ID: RRF4 =DCAL6.D					
COMPOUND	RRF4				
TPH C10-C28	34351663.75				
==========					
Triacontane(SURR)	29983565				
o-Terphenyl Surrogate(SURR)	44773050				

050706 950

FORM VI

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1005 End: 1236

COMPOUND	CURVE	COEFFICIENTS AO	COEFFICIENTS A1	%RSD OR R^2
TPH C10-C28	LINR		2.865221E-08	0.99837
==========				
Triacontane(SURR)	AVRG		31537153.333	3.4
o-Terphenyl Surrogate(SURR)	AVRG		39575661.667	10

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1828 End: 2100

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT1: CA1.D RT2: CAL2.D
RT3: CAL3.D RT4: CAL4.D RT5: CAL5.D

COMPOUND	RT1	RT2	RT3	RT4	RT5	MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703	4.703	4.703	4.703	4.703			
==========								
Triacontane(SURR)	7.670	7.660	7.653	7.690	7.663			
o-Terphenyl Surrogate(SURR)	4.913	4.903	4.897	4.920	4.913			

050706 950 FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1828 End: 2100

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT6: CAL6.D

COMPOUND	RT6					MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703					4.703	2.033	7.372
==========								
Triacontane(SURR)	7.637					7.690	7.537	7.843
o-Terphenyl Surrogate(SURR)	4.903					4.920	4.822	5.018

050706 950

FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1005 End: 1236

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT1: DCAL1.D RT2: DCAL2.D
RT3: DCAL3.D RT4: DCAL4.D RT5: DCAL5.D

COMPOUND	RT1	RT2	RT3	RT4	RT5	MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703	4.703	4.703	4.703	4.703			
==========								
Triacontane(SURR)	7.543	7.537	7.543	7.570	7.590			
o-Terphenyl Surrogate(SURR)	4.787	4.783	4.793	4.800	4.797			

050706 950

FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 Calibration Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1005 End: 1236

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT6: DCAL6.D

COMPOUND	RT6					MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703					4.703	2.033	7.372
==========								
Triacontane(SURR)	7.590					7.570	7.420	7.720
o-Terphenyl Surrogate(SURR)	4.797					4.800	4.705	4.895

050706 950

FORM VI

7SSC

8015 DRO ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/01/06 Time: 2130

CCV ID: SSC404093 Lab File ID: SECCCV.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF	%D
TPH C10-C28	61851507	31734539	13.2
==========			
Triacontane(SURR)	29694878	29033365	2.2
o-Terphenyl Surrogate(SURR)	39098058	40884800	4.6

050706 950

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/15/06 Time: 0921

CCV ID: CCV407000 Lab File ID: DROCCV5.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61851507	33798450	1.0
==========			
Triacontane(SURR)	29694878	29491115	0.7
o-Terphenyl Surrogate(SURR)	39098058	40494020	3.6

050706 950

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/15/06 Time: 1424

CCV ID: CCV407001 Lab File ID: DROCCV5B.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61851507	34389927	3.0
==========			
Triacontane(SURR)	29694878	31144740	4.9
o-Terphenyl Surrogate(SURR)	39098058	39995530	2.3

050706 950

FORM VII

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/15/06 Time: 1626

CCV ID: CCV408210 Lab File ID: DROCCV6.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61851507	35795071	7.0
==========			
Triacontane(SURR)	29694878	31141195	4.9
o-Terphenyl Surrogate(SURR)	39098058	40608080	3.9

050706 950

FORM VII

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/15/06 Time: 2331

CCV ID: CCV408211 Lab File ID: DROCCV6A.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61851507	36074565	8.0
==========			
Triacontane(SURR)	29694878	31668480	6.6
o-Terphenyl Surrogate(SURR)	39098058	43821800	12.1

050706 950

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/16/06 Time: 0504

CCV ID: CCV408212 Lab File ID: DROCCV7.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61851507	36754088	10.0
==========			
Triacontane(SURR)	29694878	33954085	14.3
o-Terphenyl Surrogate(SURR)	39098058	43114390	10.3

050706 950

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/16/06 Time: 0937

CCV ID: CCV408213 Lab File ID: DROCCV8.D Init. Calib. Date Begin: 06/01/06 End: 06/01/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61851507	37027181	10.0
==========			
Triacontane(SURR)	29694878	33329360	12.2
o-Terphenyl Surrogate(SURR)	39098058	44507430	13.8

050706 950

FORM VII

7SSC

8015 DRO ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/30/06 Time: 1307

CCV ID: SSC413170 Lab File ID: DSECCV.D Init. Calib. Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF	%D
TPH C10-C28	39275877	33806569	3.1
==========			
Triacontane(SURR)	31537153	28856505	8.5
o-Terphenyl Surrogate(SURR)	39575662	43597510	10.2

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 06/30/06 Time: 1845

CCV ID: CCV413169 Lab File ID: DCCVB21.D Init. Calib. Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	39275877	33763771	3.3
==========			
Triacontane(SURR)	31537153	34051350	8.0
o-Terphenyl Surrogate(SURR)	39575662	40700690	2.8

050706 950

FORM VII

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 07/01/06 Time: 0050

CCV ID: CCV413168 Lab File ID: DCCV31.D Init. Calib. Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	39275877	38445983	10.0
==========			
Triacontane(SURR)	31537153	34014695	7.9
o-Terphenyl Surrogate(SURR)	39575662	37328530	5.7

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 07/01/06 Time: 0723

CCV ID: CCV413208 Lab File ID: DCCV42.D Init. Calib. Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	39275877	37189486	6.0
==========			
Triacontane(SURR)	31537153	35098250	11.3
o-Terphenyl Surrogate(SURR)	39575662	43475780	9.9

050706 950

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Instrument ID: SFID02 CalibrationDate: 07/01/06 Time: 1054

CCV ID: CCV413209 Lab File ID: DCCV52.D Init. Calib. Date Begin: 06/30/06 End: 06/30/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	39275877	36186451	4.0
==========			
Triacontane(SURR)	31537153	34997065	11.0
o-Terphenyl Surrogate(SURR)	39575662	38529810	2.6

050706 950

FORM VII

Chain of Custody Documentation

050706 950

DRMO Chain of Custody

2504064-ELM

Project Site		NAPR DRMO				Analysis Requested												Project No. 315616.AC.FI
Project Manager		Russ Bowen (CH2M HILL)																
Contact Tel No.		813-874-0777																Lab Batch/SDG ID
Contact Address		4350 W. Cypress Street, Suite 600, Tampa, FL 33607																
Lab Name		PEL Labs																Lab Tel No./Fax No.
Lab Contact																		813-237-2805/813-248-1537
Lab Address		4420 Pendola Point Road Tampa,FL 33619																
Item	Sample ID	Station ID	Matrix	Date & Time Collected	Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)									Comments
1	NRS2009SB04-S2	NRS2009SB04	Soil	6/8/2006 1155	1			1										01
2	NRS2009SB04-S3	NRS2009SB04	Soil	6/8/2006 1224	1			1										02
3	NRS2009SB08-S2	NRS2009SB08	Soil	6/8/2006 1320	1			1										03
4	NRS2009SB08-S3	NRS2009SB08	Soil	6/8/2006 1358	3			3										Use extra bottles for MS/MSD 04.05,06
5	NRS2009SB10-S2	NRS2009SB10	Soil	6/8/2006 1451	1			1										07
6	NRS2009SB10-S3	NRS2009SB10	Soil	6/8/2006 1522	3			3										Use extra bottles for MS/MSD 08,09.10
7	NRS2009SB15-S1	NRS2009SB15	Soil	6/8/2006 0851	1			1										11
8	NRS2009SB15-S3	NRS2009SB15	Soil	6/8/2006 0921	1			1										12
9	NRS2009SB16-S1	NRS2009SB16	Soil	6/6/2006 0910	1			1										13
10	NRS2009SB16-S3	NRS2009SB16	Soil	6/6/2006 0930	1			1										14
11	NRS2009SB17-S1	NRS2009SB17	Soil	6/6/2006 1525	1			1										15
12	NRS2009SB17-S3	NRS2009SB17	Soil	6/6/2006 1535	1			1										16

Sampled By: Kenji Butler | Date/Time: 6/9/2006 1200 | Custody Seal: (Y) / N | Relinquished By: Kenji Butler | Date/Time: 6/9/06 1300

Shipped Via: UPS (FedEx) Hand Other (Please specify):

Samples Temperature and Condition Upon Receipt (for lab's use):

Received By: Ed Morse Pel	Date/Time: 06/10/06 930	Custody Seal: (Y) / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks:

3.6c

2504064

DRMO Chain of Custody

2504064-ELM

Project Site	NAPR DRMO
Project Manager	Russ Bowen (CH2M HILL)
Contact Tel No.	813-874-0777
Contact Address	4350 W. Cypress Street, Suite 600, Tampa, FL 33607
Lab Name	PEL Labs
Lab Contact	
Lab Address	4420 Pendola Point Road Tampa,FL 33619

Project No. 315616.AC.FI

Lab Batch/SDG ID

Lab Tel No./Fax No.

813-237-2805/813-248-1537

Item	Sample ID	Station ID	Matrix	Date & Time Collected	Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)									Comments
1	NRS2009SB18-S1	NRS2009SB18	Soil	6/7/2006 0927	1			1										17
2	NRS2009SB18-S3	NRS2009SB18	Soil	6/7/2006 1606	1			1										18
3	NRS2009FD01-S3	NRS2009SB18	Soil	6/7/2006 1606	1			1										19
4	NRS2009SB19-S1	NRS2009SB19	Soil	6/6/2006 1630	1			1										20
5	NRS2009SB19-S3	NRS2009SB19	Soil	6/8/2006 1745	1			1										
6	NRS2009FD02-S3	NRS2009SB19	Soil	6/8/2006 1745	1			1										
7	NRS2009SB20-S1	NRS2009SB20	Soil	6/7/2006 1311	1			1										
8	NRS2009SB20-S3	NRS2009SB20	Soil	6/8/2006 1725	1			1										
9	NRS2009SB21-S1	NRS2009SB21	Soil	6/8/2006 1009	1			1										
10	NRS2009SB21-S3	NRS2009SB21	Soil	6/8/2006 1032	1			1										
11	NRS2009SB22-S3	NRS2009SB22	Soil	6/8/2006 0858	1			1										
12																		

Sampled By: Kenji Butler | Date/Time: 6/9/2006 1200 | Custody Seal: Y / N | Relinquished By: [signature] | Date/Time: 6/9/06 ~~1500~~ KB 1300

Shipped Via: UPS FedEx Hand Other (Please specify):

Samples Temperature and Condition Upon Receipt (for lab's use):

Received By: Ed Moore Pel	Date/Time: 06/10/06 930	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks:

Prepared by Kenji Butler 6/9/2006

2504064

96

FedEx Express International Air Waybill

Origin Copy

PACKAGE LABEL

COMMERCIAL INVOICE LABEL 8525 7960 5760

DELIVERY RECORD LABEL 8525 7960 5760

DELIVERY REATTEMPT LABEL 8525 7960 5760

1 From

Date 6/9/06 Sender's FedEx Account Number ~~0336-3482-0~~

Sender's Name Kenji Butler Phone 850-443-0010

Company CH2M Hill

Address Bldg 192, Forrestal Dr

Address

City Ceiba State/Province PR

Country USA ZIP/Postal Code 00735

2 To

Recipient's Name Sample Custody Phone 813-237-2805

Company PEL Labs

Address 4420 Pendola Point Road Dept./Floor

Address

City Tampa State/Province FL

Country USA ZIP/Postal Code 33619

Recipient's Tax ID number for Customs purposes
e.g., GST/RFC/VAT/IN/EIN, or as locally required

3 Shipment Information

☐ For EU Only: Tick here if goods are not in free circulation and provide C.I.

Total Packages (Shipper's Load and Count/SLAC): 2

Total Weight: 77.35 ☒ lbs ☐ kg DIM L / W / H ☐ in. ☐ cm

Commodity Description REQUIRED	Harmonized Code	Country of Manufacture	Value for Customs REQUIRED
Sample Kits			$100.00
Soil Samples			$1,200.00
Water Samples			$500.00

For U.S. Export Only: Check One
☐ No SED required per Exemption
☐ No SED required, value $2500 or less per Schedule B Commodity number
☐ SED attached (provide export license no. and exp. date or license exception symbol, w/ECCN if applicable)

Total Declared Value for Carriage

Total Value for Customs (Specify Currency): $1,600.00

4 Express Package Service

Packages up to 150 lbs. / 68 kg
For packages over 150 lbs. (68 kg), use the FedEx Expanded Service Intl. Air Waybill.

1 ☒ FedEx Intl. Priority
6 ☐ FedEx Intl. First — Available to select locations. Higher rates apply.
3 ☐ FedEx Intl. Economy — FedEx Envelope and FedEx Pak rate not available

5 Packaging

*These unique brown boxes with special pricing are provided by FedEx for FedEx Intl. Priority only.

6 ☐ FedEx Envelope 2 ☐ FedEx Pak 3 ☐ FedEx Box 4 ☐ FedEx Tube
1 ☒ Other PW ☐ FedEx 10kg Box* PX ☐ FedEx 25kg Box*

6 Special Handling

1 ☐ HOLD at FedEx Location 3 ☒ SATURDAY Delivery — Available to select locations for FedEx Intl. Priority only

7a Payment *Bill transportation charges to:*

Enter FedEx Acct. No. or Credit Card No. below.
1 ☒ Sender Acct. No. in Section 1 will be billed. 2 ☒ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash Check/Cheque

FedEx Acct. No. 0336 3482-0

Credit Card No.

Credit Card Exp. Date

Total Transportation

Specify Currency

7b Payment *Bill duties and taxes to:*

ALL shipments can be subject to Customs charges, which FedEx does not estimate prior to clearance.

Enter FedEx Acct. No. below.
1 ☒ Sender Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 5 ☐ Cash Check/Cheque

FedEx Acct. No.

8 Your Internal Billing Reference

First 24 characters will appear on invoice.

315616.AC.FI

9 Required Signature

Use of this Air Waybill constitutes your agreement to the Conditions of Contract on the back of this Air Waybill, and you represent that this shipment does not require a U.S. State Department License or contain dangerous goods. Certain international treaties, including the Warsaw Convention, may apply to this shipment and limit our liability for damage, loss, or delay, as described in the Conditions of Contract. **WARNING:** These commodities, technology, or software were exported from the United States in accordance with Export Administration Regulations. Diversion contrary to U.S. law prohibited.

Sender's Signature:

This is not authorization to deliver this shipment without a recipient signature.

Received above shipment in good order and condition. We agree to pay all charges, including Customs duties and taxes as applicable, and we agree to the Conditions of Contract as stated on the reverse side of the Recipient's Copy.

Recipient's Signature:

Not all services and options are available to all destinations. Dangerous goods cannot be shipped using this Air Waybill.

500

PART 158410
Rev. Date 10/03
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Form ID No.

FedEx Tracking Number 8525 7960 5760 0402

Origin Station ID	Destination Station ID	URSA Routing	Handling Units
WBPP	XO MCFA	TPA	Total Volume (cm)

Received At: 1 ☐ Reg. Stop 2 ☐ On-Call Stop 3 ☐ Drop Box 4 ☐ World Service Center 5 ☒ Station

Forms Attached: ☐ CI ☐ SED ☐ CO

Base Charges FedEx Emp. # 56904 Declared Val. Chrg. Audit Emp. # Date 6-9 Time Other ODA/OPA Del. Courier Emp. # Date Time Credit Card Auth.

SRC 2/05

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2504064

97

SAMPLE RECEIPT CONFIRMATION SHEET

Client Information

SDG:	2504064	**Req:**	70910
Client:	CH2M Hill	**Project:**	Buildings 2009 for 2006
Level:	3	**Date Rec'd:**	6/10/06 9:30:00 AM
Rec'd via:	Fed-Ex	**Due Date:**	07/03/06

Sample Verification

Samples/Cooler Secure?	Yes	**All Samples on COC accounted For?**	Yes
Temperature of Samples(Celsius)	3.6	**All Samples Rec'd Intact?**	Yes
pH Verified?	No	**Sample Vol. Stuff. For Analysis?**	Yes
pH WNL?	No	**Samples Rec'd W/I Hold Time?**	Yes
Soil Origin (Domestic/Foreign):	Domestic	**Are All Samples to be Analyzed?**	Yes
Site Location/Project on COC?	Yes	**Correct Sample Containers?**	Yes
Client Project # on COC?	Yes	**COC Comments written on COC?**	Yes
Project Mgr. Indicated on COC?	Yes	**Samplers Initials on COC?**	Yes
COC relinquished/Dated by Client?	Yes	**Sample Date/Time Indicated?**	Yes
COC Received/Dated by PEL?	Yes	**TAT Requested:**	STD
Specific Subcontract Indicated?	No	**Client Requests Verbal Results?**	No
Samples Received By	Fed-Ex	**Client Requests Faxed Results?**	No
PEL to Conduct ALL Analyses?	Yes		

Subcontract Analysis

Parameter	Due Date	Via	Lab Name	Comments

PEER REVIEW _____ **PM REVIEW:** _____

Client: CH2M Hill

WONo: 2504064 **Profile Name:** U.S. NAPR **Profile #:** 70910

MATRIX ***S***

Sample #	Parameter		Relinquished	Received	Date	Time
01 - 20	Dry Weight	Dry Weight	[illegible]	SAD	6-14-06	9:00
01 - 20	Dry Weight	Dry Weight	SAD	ELM	6/14/06	10:25
01 - 20	8015	DRO	[illegible]	[illegible]	6/14/06	2:15
01 - 20	8015	DRO	[illegible]	[illegible]	6/14/06	5:00

Additional:

01-20	8015	DRO	ELM	ED	6-22-06	12pm
01-20	8015	DRO	ED	ELM	6-22-06	4pm

Comments:

Addendum

050706 950

Letter of Acceptance

Customer Name: CH2M Hill

Date and Time Received: 6/10/2006 9:30:00 AM

Date to be Reported: 7/1/2006

Laboratory Submission Number/SDG: 2504064

Get Detailed Analyte List here: www.pelab.com/webdms/Default.asp?LoaSDG=2504064

Project: NAPR DRMO 315616.AC.FI

Samples: The submission consisted of 20 samples with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: 8015.

Sample Custody/COC discrepancies:

None.

Notes:

None.

Distribution of Report to:

CH2M Hill
Attn: Kevin Sanders
Phone: W 352-335-5877

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. PEL letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials

Log-in Report

Level: 3

Total of: 20 analyses on 20 samples (including QC) *12-Jun-06*

Report/SDG #: 2504064

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB04-S2	250406401	NRS2009SB04	SO	6/8/2006 11:55:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB04-S3	250406402	NRS2009SB04	SO	6/8/2006 12:24:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB08-S2	250406403	NRS2009SB08	SO	6/8/2006 1:20:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB08-S3	250406404	NRS2009SB08	SO	6/8/2006 1:58:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB08-S3MS	250406405	NRS2009SB08	SQ	6/8/2006 1:58:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB08-S3SD	250406406	NRS2009SB08	SQ	6/8/2006 1:58:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

Report/SDG #: 2504064

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB10-S2	250406407	NRS2009SB10	SO	6/8/2006 2:51:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB10-S3	250406408	NRS2009SB10	SO	6/8/2006 3:22:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB10-S3MS	250406409	NRS2009SB10	SQ	6/8/2006 3:22:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB10-S3SD	250406410	NRS2009SB10	SQ	6/8/2006 3:22:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB15-S1	250406411	NRS2009SB15	SO	6/8/2006 8:51:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB15-S3	250406412	NRS2009SB15	SO	6/8/2006 9:21:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

Report/SDG #: 2504064

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB16-S1	250406413	NRS2009SB16	SO	6/6/2006 9:10:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB16-S3	250406414	NRS2009SB16	SO	6/6/2006 9:30:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB17-S1	250406415	NRS2009SB17	SO	6/6/2006 3:25:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB17-S3	250406416	NRS2009SB17	SO	6/6/2006 3:35:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB18-S1	250406417	NRS2009SB18	SO	6/7/2006 9:27:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB18-S3	250406418	NRS2009SB18	SO	6/7/2006 4:06:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

Report/SDG #: 2504064

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FD01-S3	250406419	NRS2009SB18	SO	6/7/2006 4:06:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB19-S1	250406420	NRS2009SB19	SO	6/6/2006 4:30:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

Pace Analytical®
del Caribe

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Puerto Rico Laboratory
El Retiro Industrial Zone
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San German, PR 00683
Phone: 787.892.2650
Fax: 787.892.1054
www.pacelabs.com

August 23, 2006

Mr. Brian Spann
PEL Laboratories, Inc.
4420 Pendola Point Road
Tampa, F.L. 33619

RE: Project: NAPR DRMO 315616.AC.FI
Laboratory Submission Number / SDG: 2504066 R3

Dear Mr. Spann:

I certify that the contents of this package were verified and found technically complete. On this project the following twenty-seven (27) Soil Samples were evaluated:

NRS2009SB19-S3, NRS2009FD02-S3, NRS2009SB20-S1, NRS2009SB20-S3, NRS2009SB21-S1, NRS2009SB21-S3, NRS2009SB22-S1, NRS2009SS01-B1, NRS2009SS02-B1, NRS2009SS03-B1, NRS2009SS04-B1, NRS2009SS05-B1, NRS2009SS06-B1, NRS2009SS07-B1, NRS2009FD03-B1, NRS2009SS08-B1, NRS2009SS09-B1, NRS2009SS10-B1, NRS2009SS11-B1, NRS2009SS12-B1, NRS2009SS12-B1 MS, NRS2009SS12-B1 MSD, NRS2009SS13-B1, NRS2009SS14-B1, NRS2009SS15-B1, NRS2009SS15-B1 MS, NRS2009SS15-B1 MSD

Seven (7) samples were prepared by method SW846 EPA 3550C for DRO 8015 semi-volatiles analysis and analyzed for Diesel Range Organics fraction for DRO by Method EPA SW846 Modified 8015 analyte Range C10-C28. Twenty (20) samples were prepared by method EPA 3050B and analyzed by EPA Method 6010B for ICP metals (Arsenic).

ESTADO LIBRE ASOCIADO DE PUERTO RICO
$1.00 $1.00
Lic. Sandra Y. Laboy Olivieri
Lic.# 4122
1099332
QUIMICO LICENCIADO

Certified by:

Sandra Laboy, QA Analyst
Chemist License 4122

Should you have any questions regarding this package verification, please contact us at 787-892-2680.

Milton Martínez
Project Manager
Pace Analytical, Inc.

PEL Laboratories, Inc.

Customer Name:	CH2M Hill
Date and Time Received:	6/10/2006 9:30:00 AM
Date Reported:	6/27/2006
Laboratory Submission Number/SDG:	2504066
Project:	NAPR DRMO 315616.AC.FI

Samples: The submission consisted of 27 samples with sample identification shown in the attached data tables.

Tests: The samples were analyzed for the methods listed on the attached table of contents.

Results: See the attached data tables for results.

Distribution of Report to:

CH2M Hill
Attn: Kevin Sanders
Phone: W 352-335-5877

Respectfully Submitted,

Brian Spann
Laboratory Manager
PEL Laboratories, Inc.

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. PEL letters and reports are for the exclusive use of the client to whom they are addressed. Our Letters and reports apply to the sample tested and are n necessarily indicative of the qualities of apparently identical or similar materials

4420 Pendola Point Road • Tampa, Florida 33619
(813)247-2805 • FAX: (813)248-1537
Website: www.pelab.com

Organics **3**
METHOD 8015 GC 8015 DRO ORGANICS..... 6
Sample Data 10
QC Summary 18
Standards Data 24

Inorganics..... **35**
METALS DATA PACKAGE TOTALS 38
Sample Data 43
QC Summary 60

Chain of Custody Documentation..... **121**

Addendum **128**

EXECUTIVE SUMMARY - Detection Highlights

2504066

SAMPLE ID: NRS2009FD02-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	3.4	3	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB20-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	130	2	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB20-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	20.8	2.5	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB21-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	11.5	2.4	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB21-S3

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	2.7	2.6	MG/KG	SW8015-E

SAMPLE ID: NRS2009SB22-S1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH C10-C28	234	22.4	MG/KG	SW8015-E

270606 1313

EXECUTIVE SUMMARY - Detection Highlights

2504066

SAMPLE ID: NRS2009SS01-B1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Arsenic	2.28	0.334	MG/KG	SW6010B

SAMPLE ID: NRS2009SS02-B1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Arsenic	2.2	1.36	MG/KG	SW6010B

SAMPLE ID: NRS2009SS08-B1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Arsenic	1.27	0.277	MG/KG	SW6010B

SAMPLE ID: NRS2009SS09-B1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Arsenic	3.23	0.335	MG/KG	SW6010B

270606 1313

Organics

270606 1313

Organic Data Qualifiers

U Indicates the analyte was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that analyte. The reporting limit can vary from sample to sample depending on dilution factors or the percent moisture adjustment when indicated.

J Indicates estimated value. It is used when the data indicates the presence of an analyte above the method detection limit (MDL) yet lower than the reporting limit.

B Indicates the analyte was found in the associated blank as well as in the sample. The notation indicates possible contamination of the sample.

E Indicates the value reported is above the highest calibration standard for that analyte. The sample should be analyzed at an appropriate dilution. "E" qualified values are estimations and the diluted result may be reported on another Form 1.

D Indicates the analyte has been identified in a dilution reanalysis. "D" qualifiers are used for samples that have been analyzed at a lesser dilution than required for accurate quantitation.

C The "C" qualifier indicates the presence of this analyte has been confirmed by GC/MS analysis.

P This qualifier is used for pesticide / Aroclor target analytes where there is greater than 25% difference for the detected concentration between the two GC columns.

N This qualifier indicates presumptive evidence of an analyte. This qualifier is only used for tentatively identified compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

X Data flagged as rejected by analyst utilizing analytical judgement.

270606 1313

Organic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for organic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

270606 1313

GC 8015 DRO ORGANICS

METHOD 8015

270606 1313

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504066

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHODS

EPA SW846 Modified 8015
Analyte range C10-C28

IV. PREPARATION

Soil samples were prepared by SW846 EPA 3550C for DRO 8015 semi-volatiles analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

This method does not require the use of internal standards.

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504066

Client: CH2M Hill

F. Samples:

Sample analysis proceeded normally.
Sample NRS2009SB22-S1 required a 1:10 dilution due to high concentration of the following analyte(s): TPH .

I certify that this data package is in compliance with the terms and conditions agreed to by the client and PEL, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: Thomas Scott **DATE:** **06/23/2006**

W:\Narratives\SemiVols\2504\2504066_8015.doc

8015 DRO ORGANIC CROSS REFERENCE TABLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Method: 8015

EPA Sample No	Lab Sample ID
NRS2009SB19-S3	250406601
NRS2009FD02-S3	250406602
NRS2009SB20-S1	250406603
NRS2009SB20-S3	250406604
NRS2009SB21-S1	250406605
NRS2009SB21-S3	250406606
NRS2009SB22-S1	250406607

270606 1313

Sample Data

270606 1313

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB19-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406601 Lab File ID: 66-1.D

Sample wt/vol: 15.04 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/21/06 Time: 2216

PercentSolids: 67.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	3	U

270606 1313

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD02-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406602 Lab File ID: 66-2.D

Sample wt/vol: 15.06 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/21/06 Time: 2317

PercentSolids: 65.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	3.4	

270606 1313

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB20-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406603 Lab File ID: 66-3.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0017

PercentSolids: 97.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB20 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	130	

270606 1313

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB20-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406604 Lab File ID: 66-4.D

Sample wt/vol: 15.16 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0318

PercentSolids: 77.9 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB20 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	20.8	

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Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB21-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406605 Lab File ID: 66-5.D

Sample wt/vol: 15.08 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0418

PercentSolids: 83.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB21 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	11.5	

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Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB21-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406606 Lab File ID: 66-6.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0518

PercentSolids: 75.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB21 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.7	

270606 1313

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB22-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406607 Lab File ID: 66-7D10.D

Sample wt/vol: 15.21 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0619

PercentSolids: 88.2 decanted : Dilution Factor: 10

Extraction: SONC Station ID: NRS2009SB22 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	234	

270606 1313

Form I

QC Summary

270606 1313

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

11112MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 215679 Lab File ID: 1112MBK.D

Sample wt/vol: 15 Units: G Date Received: 06/15/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/20/06 Time: 2320

PercentSolids: 100 decanted : Dilution Factor: 1

Extraction: SONC Station ID: Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2	U

270606 1313

Form I

8015 DRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.: 11112MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Lab File ID: 1112MBK.D Lab Sample ID: 215679

Instrument ID: SFID02 Date Extracted: 06/15/06

Matrix: SOIL Date Analyzed: 06/20/06

Level:(low/med) LOW Time Analyzed: 2320

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	11112LCS	215680	1112LCS.D	06/20/06	2350
2	NRS2009SB19-S3	250406601	66-1.D	06/21/06	2216
3	NRS2009FD02-S3	250406602	66-2.D	06/21/06	2317
4	NRS2009SB20-S1	250406603	66-3.D	06/22/06	0017
5	NRS2009SB20-S3	250406604	66-4.D	06/22/06	0318
6	NRS2009SB21-S1	250406605	66-5.D	06/22/06	0418
7	NRS2009SB21-S3	250406606	66-6.D	06/22/06	0518
8	NRS2009SB22-S1	250406607	66-7D10.D	06/22/06	0619

COMMENTS:

Page 1 of 1

270606 1313

Form IV

2A

SOIL 8015 DRO ORGANIC SURROGATE RECOVERY

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG NO.: 2504066

Column(1): RTX-5 ID: 0.53 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
11112LCS	86.5	64.2					0
11112MBK	84.2	59.7					0
NRS2009FD02-S3	69.0	63.4					0
NRS2009SB19-S3	79.2	66.3					0
NRS2009SB20-S1	83.1	73.5					0
NRS2009SB20-S3	81.7	63.5					0
NRS2009SB21-S1	90.6	72.2					0
NRS2009SB21-S3	92.6	57.5					0
NRS2009SB22-S1	75.8	63.5					0

Control Limits

S1	=	Triacontane	30 -	150
S2	=	o-Terphenyl Surrogate	47 -	142

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

270606 1313

8015 DRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 06/19/06

Instrument ID: SFID02

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 7.55 S2 : 4.79

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
1	STD408788	12785	DROCAL6.D	06/19/06	1610	7.61	4.82
2	STD408787	12784	DROCAL5.D	06/19/06	1640	7.5	4.77
3	STD408786	12783	DROCAL4.D	06/19/06	1710	7.55	4.79
4	STD408785	12782	DROCAL3.D	06/19/06	1741	7.52	4.78
5	STD408784	12781	DROCAL2.D	06/19/06	1811	7.49	4.77
6	STD408783	12780	DROCAL1.D	06/19/06	1841	7.53	4.79
7	SSC408791	12786	DROSECCV.D	06/19/06	1911	7.45	4.77
8	CCV408789	12786	DROCCV2.D	06/20/06	1848	7.52	4.77
9	11112MBK	215679	1112MBK.D	06/20/06	2320	7.41	4.75
10	11112LCS	215680	1112LCS.D	06/20/06	2350	7.5	4.77
11	CCV408790	12786	DROCCV3.D	06/21/06	0020	7.51	4.78
12	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/21/06	1511		
13	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/21/06	1713		
14	CCV409489	12786	DROCCV2.D	06/21/06	2146	7.5	4.78
15	NRS2009SB19-S3	250406601	66-1.D	06/21/06	2216	7.45	4.75
16	NRS2009FD02-S3	250406602	66-2.D	06/21/06	2317	7.47	4.76
17	NRS2009SB20-S1	250406603	66-3.D	06/22/06	0017	7.54	4.78
18	NRS2009SB20-S1MS	215681	66-3MS.D	06/22/06	0117	7.56	4.79
19	NRS2009SB20-S1SD	215682	66-3SD.D	06/22/06	0218	7.49	4.76
20	NRS2009SB20-S3	250406604	66-4.D	06/22/06	0318	7.53	4.78
21	NRS2009SB21-S1	250406605	66-5.D	06/22/06	0418	7.56	4.79
22	NRS2009SB21-S3	250406606	66-6.D	06/22/06	0518	7.61	4.81
23	NRS2009SB22-S1	250406607	66-7D10.D	06/22/06	0619	7.52	4.79
24	CCV409490	12786	DROCCV3.D	06/22/06	0719	7.52	4.79

			QC LIMITS
S1	=	Triacontane	(+/- 0.15 MINUTES)
S2	=	o-Terphenyl Surrogate	(+/- 0.1 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

Page 1 of 1

270606 1313 FORM VIII

3

8015 DRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

11112LCS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

COMPOUND	SPIKE ADDED MG/KG	LCS CONCENTRATION MG/KG	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	33.3	17.4	52.3		7.0	51 - 108

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

270606 1313

Form III

Standards Data

270606 1313

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

LAB FILE ID: RRF0.025 =DROCAL2.D RRF0.1 =DROCAL1.D
RRF0.5 =DROCAL3.D RRF1 =DROCAL4.D RRF2 =DROCAL5.D

COMPOUND	RRF0.025	RRF0.1	RRF0.5	RRF1	RRF2
TPH C10-C28	156406560	70895410	38846792	34648531	35551508.5
==========					
Triacontane(SURR)	26046240	22183600	31021885	27046830	28291890
o-Terphenyl Surrogate(SURR)	37692780	37544690	45824340	39389960	39657510

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

LAB FILE ID:	RRF4 =DROCAL6.D				
COMPOUND	RRF4				
TPH C10-C28	33805286				
==========					
Triacontane(SURR)	28246505				
o-Terphenyl Surrogate(SURR)	42062560				

270606 1313

FORM VI

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

COMPOUND	CURVE	COEFFICIENTS AO	COEFFICIENTS A1	%RSD OR R^2
TPH C10-C28	LINR	-0.0705819	2.991599E-08	0.99905
==========				
Triacontane(SURR)	AVRG		27139491.7	10.9
o-Terphenyl Surrogate(SURR)	AVRG		40361973.3	7.8

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT1: DROCAL2.D RT2: DROCAL1.D
RT3: DROCAL3.D RT4: DROCAL4.D RT5: DROCAL5.D

COMPOUND	RT1	RT2	RT3	RT4	RT5	MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703	4.703	4.703	4.703	4.703			
==========								
Triacontane(SURR)	7.487	7.530	7.523	7.550	7.503			
o-Terphenyl Surrogate(SURR)	4.773	4.787	4.780	4.787	4.773			

270606 1313

FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT6: DROCAL6.D

COMPOUND	RT6					MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703					4.703	2.033	7.372
==========								
Triacontane(SURR)	7.610					7.550	7.401	7.699
o-Terphenyl Surrogate(SURR)	4.817					4.787	4.691	4.882

270606 1313

FORM VI

7SSC

8015 DRO ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 CalibrationDate: 06/19/06 Time: 1911

CCV ID: SSC408791 Lab File ID: DROSECCV.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF	%D
TPH C10-C28	61692348	38824034	9.0
==========			
Triacontane(SURR)	27139492	26695515	1.6
o-Terphenyl Surrogate(SURR)	40361973	37782810	6.4

270606 1313

FORM VII

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 CalibrationDate: 06/20/06 Time: 1848

CCV ID: CCV408789 Lab File ID: DROCCV2.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61692348	39519604	11.0
==========			
Triacontane(SURR)	27139492	26654025	1.8
o-Terphenyl Surrogate(SURR)	40361973	39851760	1.3

270606 1313

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 CalibrationDate: 06/21/06 Time: 0020

CCV ID: CCV408790 Lab File ID: DROCCV3.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61692348	38665673	9.0
==========			
Triacontane(SURR)	27139492	31134385	14.7
o-Terphenyl Surrogate(SURR)	40361973	41791760	3.5

270606 1313

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 CalibrationDate: 06/21/06 Time: 2146

CCV ID: CCV409489 Lab File ID: DROCCV2.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61692348	35785835	0.0
==========			
Triacontane(SURR)	27139492	29472855	8.6
o-Terphenyl Surrogate(SURR)	40361973	41863680	3.7

270606 1313

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID: SFID02 CalibrationDate: 06/22/06 Time: 0719

CCV ID: CCV409490 Lab File ID: DROCCV3.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61692348	39745665	12.0
==========			
Triacontane(SURR)	27139492	31023255	14.3
o-Terphenyl Surrogate(SURR)	40361973	42184910	4.5

270606 1313

FORM VII

Inorganics

270606 1313

Inorganic Data Qualifiers

C (Concentration) Qualifier - Entries and their meanings are:

B The reported value obtained was less than the RL but greater than or equal to the MDL.

E The reported value obtained was over calibration or linear range.

U The reported value obtained was less than the MDL or was not detected.

Q Qualifier - Entries and their meanings are:

U The reported value is estimated because of interference. An explanatory comment must be included under "Comments" on the Cover Page if the problem applies to all samples in this data package or on the individual FORM 1 if it is an isolated problem.

M Duplicate injection precision was not met (two analyses of the same sample did not agree).

N Spiked sample recovery not within control limits.

E Serial Dilution percent difference not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA).

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.

***** Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

X The data is flagged as rejected by analyst utilizing analytical judgement.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can apear in the same field.

M (Method) Qualifier - Enter one of the following:

P ICP
A Flame AA
F Furnace AA
CV Manual Cold Vapor AA
TC Total Organic Carbon
AS Semi-Automated Spectrophotometric
CA Midi-Distillation Spectrophotometric
T Titrimetric
C Manual Spectrophotometric
GR Gravimetric
NR Analyte was not required by your lab

270606 1313

Inorganic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for inorganic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

A Post Digestion Spike.

L Serial Dilution.

270606 1313

METALS DATA PACKAGE
TOTALS

270606 1313

CASE NARRATIVE
METALS

PEL Lab Reference No./SDG: 2504066

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHOD

Analyses were performed according to PEL Laboratory's Standard Operating Procedures and EPA Method 6010B for ICP metals.

IV. PREPARATION

Soil samples were prepared according to PEL Laboratory's Standard Operating Procedures and EPA Method 3050B.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met. No action required. The following ICB/CCB(s) had element concentrations below the RL:

ICB409267 was analyzed on 06/22/06 11:52. The following analyte(s) were detected below RL: Arsenic at 4.15 ug/L.
CCB409716 was analyzed on 06/22/06 19:21. The following analyte(s) were detected below RL: Arsenic at 2.37 ug/L.
CCB409740 was analyzed on 06/22/06 21:22. The following analyte(s) were detected below RL: Arsenic at 2.76 ug/L.
CCB409754 was analyzed on 06/22/06 22:32. The following analyte(s) were detected below RL: Arsenic at 4.2 ug/L.

2. Method Blanks:

All acceptance criteria were met with the exception of:
Blank 216046BLK was analyzed with the soil samples on 06/22/06. The following analyte(s) were detected below RL: Arsenic at 0.274 MG/KG. Samples coded accordingly.

C. Spikes:

1. Laboratory Control Spikes (LCS):

An LCS/LCSD set was analyzed.
All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

All acceptance criteria were met with the exception of:
Post Digestion Spike NRS2009SS12-B1A was analyzed with the soil samples on 06/26/06. The following analyte(s) were recovered below criteria: Arsenic at 60.6 % with criteria of (80-120).

PEL Lab Reference No./SDG: 2504066

Client: CH2M Hill

3. **Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):**
A client requested MS/SD set was analyzed.
All percent recovery and relative percent difference (RPD) criteria were met with the exception of:
MS - NRS2009SS12-B1MS was analyzed with the soil samples on 06/26/06. The following analyte(s) were recovered below criteria: Arsenic at 0 % with criteria of (75-125).

SD - NRS2009SS12-B1SD was analyzed with the soil samples on 06/26/06. The following analyte(s) were recovered below criteria: Arsenic at 0 % with criteria of (75-125).
Samples coded accordingly.

D. Duplicate:
No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:
All acceptance criteria were met.

F. ICP Interference Check Samples:
All acceptance criteria were met.

G. Samples:
Sample analysis proceeded normally.

Samples NRS2009FD03-B1, NRS2009SS03-B1, NRS2009SS07-B1, NRS2009SS12-B1 required a 1:25 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS02-B1, NRS2009SS05-B1, NRS2009SS06-B1, NRS2009SS14-B1 required a 1:5 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS04-B1, NRS2009SS11-B1 required a 1:20 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS10-B1, NRS2009SS15-B1 required a 1:10 dilution due to matrix interference with the following analyte(s): Arsenic.

CASE NARRATIVE
METALS

PEL Lab Reference No./SDG: 2504066

Client: CH2M Hill

I certify that this data package is in compliance with the terms and conditions agreed to by the client and PEL, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: Linda Lee M. Gates **DATE: 06/27/2006**

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.

Lab Code : PEL Case No. SDG No.: 2504066

SOW No.:

EPA Sample No	Lab Sample ID
NRS2009SS01-B1	250406608
NRS2009SS02-B1	250406609
NRS2009SS03-B1	250406610
NRS2009SS04-B1	250406611
NRS2009SS05-B1	250406612
NRS2009SS06-B1	250406613
NRS2009SS07-B1	250406614
NRS2009FD03-B1	250406615
NRS2009SS08-B1	250406616
NRS2009SS09-B1	250406617
NRS2009SS10-B1	250406618
NRS2009SS11-B1	250406619
NRS2009SS12-B1	250406620
NRS2009SS13-B1	250406623
NRS2009SS14-B1	250406624
NRS2009SS15-B1	250406625

Were ICP interelement corrections applied?	Yes/No	Yes
Were ICP background corrections applied?	Yes/No	Yes
If yes - were raw data generated before application of background corrections?	Yes/No	No

Comments:

270606 1313

Sample Data

270606 1313

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS01-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406608

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 95.7 Station ID: NRS2009SS01

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.28			P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS02-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406609

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 96.1 Station ID: NRS2009SS02

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.2			P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS03-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406610

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 95.7 Station ID: NRS2009SS03

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.77	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS04-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406611

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 92.7 Station ID: NRS2009SS04

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.62	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS05-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406612

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 94.9 Station ID: NRS2009SS05

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.576	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS06-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406613

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 93.3 Station ID: NRS2009SS06

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.504	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS07-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406614

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 93.2 Station ID: NRS2009SS07

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.63	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD03-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406615

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 93.6 Station ID: NRS2009SS07

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.48	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS08-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406616

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 96.2 Station ID: NRS2009SS08

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.27			P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS09-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406617

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 94.2 Station ID: NRS2009SS09

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.23			P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS10-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406618

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 94.9 Station ID: NRS2009SS10

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.08	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS11-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406619

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 92.3 Station ID: NRS2009SS11

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS12-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406620

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 96.8 Station ID: NRS2009SS12

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.76	U	N	P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS13-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406623

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 95.2 Station ID: NRS2009SS13

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.097	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS14-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406624

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 97 Station ID: NRS2009SS14

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.483	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS15-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406625

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 97.2 Station ID: NRS2009SS15

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.14	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

QC Summary

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source: 12852

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic	400	383.000	95.8	500	501.000	100.2	503.000	100.6	P

ICV IDs: P= ICV409266

CCV1 IDs: P= CCV409272

CCV2 IDs: P= CCV409284

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	480.000	96.0	490.000	98.0	P

ICV IDs:

CCV1 IDs: P= CCV409663

CCV2 IDs: P= CCV409675

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	472.000	94.4	507.000	101.4	P

ICV IDs:

CCV1 IDs: P= CCV409677

CCV2 IDs: P= CCV409687

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	497.000	99.4	490.000	98.0	P

ICV IDs:

CCV1 IDs: P= CCV409689

CCV2 IDs: P= CCV409703

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	495.000	99.0	473.000	94.6	P

ICV IDs:

CCV1 IDs: P= CCV409715

CCV2 IDs: P= CCV409727

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	476.000	95.2	478.000	95.6	P

ICV IDs:

CCV1 IDs: P= CCV409739

CCV2 IDs: P= CCV409753

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source: 12852

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic	400	399.000	99.8	500	503.000	100.6	520.000	104.0	P

ICV IDs: P= ICV409909

CCV1 IDs: P= CCV409915

CCV2 IDs: P= CCV409927

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	534.000	106.8	508.000	101.6	P

ICV IDs:

CCV1 IDs: P= CCV409940

CCV2 IDs: P= CCV409953

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	535.000	107.0	518.000	103.6	P

ICV IDs:

CCV1 IDs: P= CCV409966

CCV2 IDs: P= CCV409978

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	510.000	102.0	526.000	105.2	P

ICV IDs:

CCV1 IDs: P= CCV410204

CCV2 IDs: P= CCV410216

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	511.000	102.2	513.000	102.6	P

ICV IDs:

CCV1 IDs: P= CCV410228

CCV2 IDs: P= CCV410229

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source: 12852

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic	400	400.000	100.0	500	516.000	103.2	506.000	101.2	P

ICV IDs: P= ICV410251

CCV1 IDs: P= CCV410257

CCV2 IDs: P= CCV410269

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	486.000	97.2	542.000	108.4	P

ICV IDs:

CCV1 IDs: P= CCV410281

CCV2 IDs: P= CCV410574

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	506.000	101.2	548.000	109.6	P

ICV IDs:

CCV1 IDs: P= CCV410586

CCV2 IDs: P= CCV410598

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	549.000	109.8	533.000	106.6	P

ICV IDs:

CCV1 IDs: P= CCV410599

CCV2 IDs: P= CCV410602

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	512.000	102.4	524.000	104.8	P

ICV IDs:

CCV1 IDs: P= CCV410797

CCV2 IDs: P= CCV410809

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil): SOIL

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic	4.15	B	3.89	B	2.76	B	4.9	B	0.274	B	P

ICB IDs: P= ICB409267

CCB1 IDs: P= CCB409273

CCB2 IDs: P= CCB409285

CCB3 IDs: P= CCB409664

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			2.3	B	1.7	U	3.56	B			P

ICB IDs:

CCB1 IDs: P= CCB409676

CCB2 IDs: P= CCB409678

CCB3 IDs: P= CCB409688

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			3.86	B	3.15	B	2.37	B			P

ICB IDs:

CCB1 IDs: P= CCB409690

CCB2 IDs: P= CCB409704

CCB3 IDs: P= CCB409716

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.7	U	2.76	B	4.2	B			P

ICB IDs:

CCB1 IDs: P= CCB409728

CCB2 IDs: P= CCB409740

CCB3 IDs: P= CCB409754

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic	1.7	U	1.7	U	1.7	U	1.7	U			P

ICB IDs: P= ICB409910

CCB1 IDs: P= CCB409916

CCB2 IDs: P= CCB409928

CCB3 IDs: P= CCB409929

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.98	B	1.7	U	1.7	U			P

ICB IDs:

CCB1 IDs: P= CCB409941

CCB2 IDs: P= CCB409942

CCB3 IDs: P= CCB409954

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.7	U	-2.78	B	1.7	U			P

ICB IDs:

CCB1 IDs: P= CCB409955

CCB2 IDs: P= CCB409967

CCB3 IDs: P= CCB409979

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.7	U	1.7	U	1.7	U			P

ICB IDs:

CCB1 IDs: P= CCB409980

CCB2 IDs: P= CCB410205

CCB3 IDs: P= CCB410217

270606 1314

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.7	U							P

ICB IDs:

CCB1 IDs: P= CCB410230

CCB2 IDs:

CCB3 IDs:

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic	1.7	U	1.7	U	1.7	U	1.73	B			P

ICB IDs: P= ICB410252

CCB1 IDs: P= CCB410258

CCB2 IDs: P= CCB410270

CCB3 IDs: P= CCB410282

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.7	U	1.7	U	1.7	U			P

ICB IDs:

CCB1 IDs: P= CCB410575

CCB2 IDs: P= CCB410587

CCB3 IDs: P= CCB410600

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.7	U	1.7	U	1.7	U			P

ICB IDs:

CCB1 IDs: P= CCB410603

CCB2 IDs: P= CCB410798

CCB3 IDs: P= CCB410810

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100		99.855	99.9		92.401	92.4

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100					100.39	100.4

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100					92.497	92.5

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100					91.72	91.7

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100		102.485	102.5			

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100		101.759	101.8			

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5A

SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS12-B1MS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.F

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 96.8

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	17.8		2.76	U	32.5	0 D	N	P

Comments:

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5A

SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS15-B1MS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.F

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 97.2

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	31		1.14	U	33.5	92.5		P

Comments:

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5A

SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS12-B1SD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 96.8

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	20		2.76	U	31.9	0 D	N	P

Comments:

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5A

SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS15-B1SD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 97.2

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	34.3		1.14	U	34	100.9		P

Comments:

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS12-B1A

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: Soil Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	80 - 120	303.00			U	500	60.6		P

Comments:

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS15-B1A

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: Soil Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	80 - 120	456.00			U	500	91.3		P

Comments:

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6

DUPLICATES

EPA Sample No.

216048LCSD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 100 % Solids for Duplicate: 100

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	20	47.1		46.5		1.3		P

Comments:

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6

DUPLICATES

EPA Sample No.

NRS2009SS12-B1SD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 96.8 % Solids for Duplicate: 96.8

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	20	17.8		20		11.6		P

Comments:

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6

DUPLICATES

EPA Sample No.

NRS2009SS15-B1SD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 97.2 % Solids for Duplicate: 97.2

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	20	31		34.3		10.1		P

Comments:

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7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI 216047LCS

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Solid LCS Source: 11519, 10140

Aqueous LCS Source:

	Aqueous			Solid (MG/KG)					
Analyte	True	Found	%R	True	Found	C	Limits		%R
Arsenic				50	47.1		80	- 120	94.2

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7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI 216048LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Solid LCS Source: 11519, 10140

Aqueous LCS Source:

	Aqueous			Solid (MG/KG)					
Analyte	True	Found	%R	True	Found	C	Limits		%R
Arsenic				50	46.5		80	- 120	93.0

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9

SERIAL DILUTIONS

EPA Sample No.

NRS2009SS12-B1L

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: Soil Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Arsenic		U	230.00	B			P

Comments:

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9

SERIAL DILUTIONS

EPA Sample No.

NRS2009SS15-B1L

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: Soil Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Arsenic		U		U			P

Comments:

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10

METHOD DETECTION LIMITS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID Number : ICAP2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Raw MDL (UG/L)	CRDL (MG/KG)	MDL (MG/KG)	Verification Date	M
Arsenic	188.981	1.7	0.5	0.17	2/16/2006	P

Comments:

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12

ICP LINEAR RANGES (SEMI-ANNUALLY)

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

ICP ID NUMBER ICAP2 DATE : 5/19/2006

Analyte	Integ. Time (sec.)	Concentration UG/L	M
Arsenic	0.1	5000	P

Comments:

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13

PREPARATION LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Method : 6010

EPA Sample No:	Preparation Date	Weight (gram)	Volume (mL)
216046BLK	19 Jun 06	0.5	
216047LCS	19 Jun 06	0.5	
216048LCSD	19 Jun 06	0.5	
NRS2009FD03-B1	19 Jun 06	0.915	
NRS2009SS01-B1	19 Jun 06	0.781	
NRS2009SS02-B1	19 Jun 06	0.956	
NRS2009SS03-B1	19 Jun 06	0.802	
NRS2009SS04-B1	19 Jun 06	0.7	
NRS2009SS05-B1	19 Jun 06	0.778	
NRS2009SS06-B1	19 Jun 06	0.903	
NRS2009SS07-B1	19 Jun 06	0.868	
NRS2009SS08-B1	19 Jun 06	0.938	
NRS2009SS09-B1	19 Jun 06	0.792	
NRS2009SS10-B1	19 Jun 06	0.828	
NRS2009SS11-B1	19 Jun 06	0.923	
NRS2009SS12-B1	19 Jun 06	0.796	
NRS2009SS12-B1MS	19 Jun 06	0.795	
NRS2009SS12-B1SD	19 Jun 06	0.81	
NRS2009SS13-B1	19 Jun 06	0.92	
NRS2009SS14-B1	19 Jun 06	0.907	
NRS2009SS15-B1	19 Jun 06	0.768	
NRS2009SS15-B1MS	19 Jun 06	0.767	
NRS2009SS15-B1SD	19 Jun 06	0.757	

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																								
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CAL01	1	11:14				X																									
CAL02	1	11:19																													
CAL03	1	11:24				X																									
CAL04	1	11:29				X																									
CAL05	1	11:34				X																									
CAL06	1	11:39				X																									
ICV409266	1	11:47				X																									
ICB409267	1	11:52				X																									
ZZZZZZ	1	11:57																													
ZZZZZZ	1	12:04																													
ICSA	1	12:12				X																									
ICSAB	1	12:16				X																									
CCV409272	1	12:21				X																									
CCB409273	1	12:26				X																									
ZZZZZZ	1	12:32																													
ZZZZZZ	1	12:37																													
ZZZZZZ	1	12:42																													
ZZZZZZ	1	12:48																													
ZZZZZZ	5	12:53																													
ZZZZZZ	1	12:58																													
ZZZZZZ	1	13:03																													
ZZZZZZ	1	13:07																													
ZZZZZZ	1	13:12																													
ZZZZZZ	5	13:17																													
CCV409284	1	13:22				X																									
CCB409285	1	13:27				X																									
ZZZZZZ	1	13:32																													
ZZZZZZ	1	13:36																													
ZZZZZZ	1	13:41																													
ZZZZZZ	5	13:46																													
ZZZZZZ	25	13:51																													
ZZZZZZ	5	13:56																													
ZZZZZZ	5	14:00																													
ZZZZZZ	5	14:05																													
ZZZZZZ	1	14:10																													
ZZZZZZ	5	14:15																													

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCV409663	1	14:20				X																									
CCB409664	1	14:25				X																									
ZZZZZZ	1	14:30																													
ZZZZZZ	5	14:34																													
ZZZZZZ	1	14:39																													
ZZZZZZ	5	14:45																													
ZZZZZZ	5	14:50																													
ZZZZZZ	25	14:55																													
ZZZZZZ	1	15:00																													
ZZZZZZ	5	15:04																													
ICSA	1	15:09				X																									
ICSAB	1	15:14				X																									
CCV409675	1	15:19				X																									
CCB409676	1	15:24				X																									
CCV409677	1	15:59				X																									
CCB409678	1	16:04				X																									
ZZZZZZ	1	16:10																													
ZZZZZZ	1	16:15																													
ZZZZZZ	1	16:20																													
ZZZZZZ	5	16:25																													
ZZZZZZ	5	16:30																													
ZZZZZZ	5	16:36																													
ICSA	1	16:41				X																									
ICSAB	1	16:45				X																									
CCV409687	1	16:50				X																									
CCB409688	1	16:54				X																									
CCV409689	1	17:07				X																									
CCB409690	1	17:12				X																									
ZZZZZZ	1	17:17																													
ZZZZZZ	1	17:22																													
ZZZZZZ	1	17:27																													
ZZZZZZ	1	17:31																													
ZZZZZZ	5	17:36																													
ZZZZZZ	1	17:42																													
ZZZZZZ	1	17:47																													
ZZZZZZ	1	17:52																													

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	1	17:57																													
ZZZZZZ	1	18:02																													
ICSA	1	18:07				X																									
ICSAB	1	18:12				X																									
CCV409703	1	18:16				X																									
CCB409704	1	18:21				X																									
ZZZZZZ	1	18:26																													
ZZZZZZ	1	18:31																													
ZZZZZZ	1	18:36																													
ZZZZZZ	1	18:41																													
ZZZZZZ	1	18:46																													
ZZZZZZ	1	18:51																													
ZZZZZZ	1	18:57																													
ZZZZZZ	1	19:02																													
ZZZZZZ	1	19:07																													
ZZZZZZ	1	19:12																													
CCV409715	1	19:17				X																									
CCB409716	1	19:21				X																									
216046BLK	1	19:26				X																									
216047LCS	1	19:31				X																									
216048LCSD	1	19:36				X																									
ZZZZZZ	1	19:40																													
ZZZZZZ	5	19:46																													
ZZZZZZ	1	19:51																													
ZZZZZZ	1	19:56																													
ZZZZZZ	1	20:01																													
NRS2009SS13-B1	1	20:06				X																									
ZZZZZZ	1	20:12																													
CCV409727	1	20:17				X																									
CCB409728	1	20:22				X																									
ZZZZZZ	1	20:27																													
ZZZZZZ	5	20:32																													
ZZZZZZ	1	20:37																													
ZZZZZZ	1	20:42																													
ZZZZZZ	1	20:47																													
NRS2009SS01-B1	1	20:52				X																									

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	1	20:57																													
ZZZZZZ	1	21:02																													
ZZZZZZ	1	21:07																													
ZZZZZZ	1	21:12																													
CCV409739	1	21:17				X																									
CCB409740	1	21:22				X																									
ZZZZZZ	1	21:27																													
ZZZZZZ	1	21:32																													
ZZZZZZ	1	21:38																													
NRS2009SS08-B1	1	21:43				X																									
NRS2009SS09-B1	1	21:48				X																									
ZZZZZZ	1	21:53																													
ZZZZZZ	1	21:58																													
ZZZZZZ	1	22:03																													
ZZZZZZ	1	22:08																													
ZZZZZZ	1	22:13																													
ICSA	1	22:17				X																									
ICSAB	1	22:22				X																									
CCV409753	1	22:27				X																									
CCB409754	1	22:32				X																									
CAL01	1	8:54				X																									
CAL02	1	8:59																													
CAL03	1	9:04				X																									
CAL04	1	9:09				X																									
CAL05	1	9:14				X																									
CAL06	1	9:18				X																									
ICV409909	1	9:26				X																									
ICB409910	1	9:31				X																									
ZZZZZZ	1	9:36																													
ZZZZZZ	1	9:41																													
ICSA	1	9:47				X																									
ICSAB	1	9:52				X																									
CCV409915	1	9:57				X																									
CCB409916	1	10:01				X																									
ZZZZZZ	1	10:06																													
ZZZZZZ	1	10:11																													

270606 1314

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	1	10:16																													
ZZZZZZ	1	10:21																													
ZZZZZZ	5	10:26																													
ZZZZZZ	1	10:31																													
ZZZZZZ	1	10:36																													
ZZZZZZ	1	10:40																													
ZZZZZZ	5	10:45																													
ZZZZZZ	25	10:50																													
CCV409927	1	10:56				X																									
CCB409928	1	11:01				X																									
CCB409929	1	11:04				X																									
ZZZZZZ	5	11:09																													
ZZZZZZ	5	11:14																													
ZZZZZZ	5	11:19																													
ZZZZZZ	10	11:24																													
ZZZZZZ	50	11:29																													
ZZZZZZ	10	11:34																													
ZZZZZZ	10	11:39																													
ZZZZZZ	10	11:43																													
ZZZZZZ	20	11:48																													
ZZZZZZ	1	11:54																													
CCV409940	1	11:59				X																									
CCB409941	1	12:04				X																									
CCB409942	1	12:07				X																									
ZZZZZZ	5	12:12																													
ZZZZZZ	10	12:17																													
ZZZZZZ	1	12:23																													
ZZZZZZ	5	12:28																													
ZZZZZZ	10	12:33																													
ZZZZZZ	20	12:38																													
ZZZZZZ	20	12:43																													
ZZZZZZ	1	12:48																													
ZZZZZZ	5	12:54																													
ZZZZZZ	10	12:59																													
CCV409953	1	13:04				X																									
CCB409954	1	13:09				X																									

270606 1314

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCB409955	1	13:12				X																									
ZZZZZZ	1	13:17																													
ZZZZZZ	5	13:23																													
ZZZZZZ	10	13:28																													
ZZZZZZ	1	13:33																													
ZZZZZZ	5	13:39																													
ZZZZZZ	10	13:44																													
ZZZZZZ	1	13:49																													
ZZZZZZ	5	13:53																													
ZZZZZZ	10	13:59																													
ZZZZZZ	20	14:04																													
CCV409966	1	14:09				X																									
CCB409967	1	14:14				X																									
ZZZZZZ	20	14:18																													
ZZZZZZ	20	14:24																													
ZZZZZZ	1	14:29																													
ZZZZZZ	5	14:34																													
ZZZZZZ	10	14:39																													
ZZZZZZ	50	14:47																													
ZZZZZZ	100	15:02																													
ZZZZZZ	20	15:07																													
ZZZZZZ	20	15:13																													
ZZZZZZ	20	15:18																													
CCV409978	1	15:23				X																									
CCB409979	1	15:28				X																									
CCB409980	1	15:31				X																									
ZZZZZZ	5	15:36																													
ZZZZZZ	25	15:41																													
ZZZZZZ	5	15:45																													
ZZZZZZ	5	15:51																													
ZZZZZZ	5	15:56																													
ZZZZZZ	5	16:01																													
ZZZZZZ	5	16:06																													
ZZZZZZ	5	16:12																													
ZZZZZZ	5	16:17																													
ZZZZZZ	5	16:23																													

270606 1314

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCV410204	1	16:27				X																									
CCB410205	1	16:32				X																									
ZZZZZZ	5	16:37																													
ZZZZZZ	5	16:43																													
ZZZZZZ	5	16:48																													
ZZZZZZ	5	16:53																													
ZZZZZZ	5	16:58																													
ZZZZZZ	5	17:03																													
ZZZZZZ	25	17:08																													
ZZZZZZ	5	17:13																													
ZZZZZZ	5	17:18																													
ZZZZZZ	5	17:23																													
CCV410216	1	17:28				X																									
CCB410217	1	17:33				X																									
NRS2009SS14-B1	5	17:38				X																									
ZZZZZZ	5	17:43																													
ZZZZZZ	25	17:48																													
ZZZZZZ	5	17:53																													
ZZZZZZ	5	17:58																													
ZZZZZZ	5	18:03																													
NRS2009SS02-B1	5	18:08				X																									
ZZZZZZ	5	18:12																													
ZZZZZZ	5	18:17																													
NRS2009SS05-B1	5	18:22				X																									
CCV410228	1	18:27				X																									
CCV410229	1	18:30				X																									
CCB410230	1	18:35				X																									
CAL01	1	9:51				X																									
CAL02	1	9:56																													
CAL03	1	10:01				X																									
CAL04	1	10:06				X																									
CAL05	1	10:11				X																									
CAL06	1	10:16				X																									
ICV410251	1	10:25				X																									
ICB410252	1	10:30				X																									
ZZZZZZ	1	10:35																													

270606 1314

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	1	10:40																													
ICSA	1	10:46				X																									
ICSAB	1	10:50				X																									
CCV410257	1	10:55				X																									
CCB410258	1	11:00				X																									
ZZZZZZ	10	11:05																													
ZZZZZZ	20	11:12																													
ZZZZZZ	100	11:17																													
ZZZZZZ	20	11:22																													
ZZZZZZ	20	11:27																													
ZZZZZZ	20	11:32																													
ZZZZZZ	10	11:37																													
ZZZZZZ	10	11:42																													
ZZZZZZ	10	11:47																													
ZZZZZZ	10	11:51																													
CCV410269	1	11:56				X																									
CCB410270	1	12:01				X																									
ZZZZZZ	10	12:06																													
ZZZZZZ	10	12:11																													
ZZZZZZ	10	12:15																													
ZZZZZZ	10	12:20																													
ZZZZZZ	20	12:25																													
ZZZZZZ	20	12:29																													
ZZZZZZ	20	12:34																													
ZZZZZZ	20	12:39																													
ZZZZZZ	20	12:44																													
ZZZZZZ	20	12:49																													
CCV410281	1	12:54				X																									
CCB410282	1	12:59				X																									
ZZZZZZ	10	13:04																													
ZZZZZZ	10	13:09																													
ZZZZZZ	20	13:14																													
ZZZZZZ	20	13:19																													
ZZZZZZ	25	13:24																													
ZZZZZZ	20	13:29																													
ZZZZZZ	25	13:34																													

270606 1314

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	25	13:39																													
ZZZZZZ	25	13:44																													
ZZZZZZ	25	13:50																													
CCV410574	1	13:55				X																									
CCB410575	1	14:00				X																									
ZZZZZZ	25	14:05																													
ZZZZZZ	50	14:10																													
ZZZZZZ	50	14:15																													
ZZZZZZ	50	14:20																													
ZZZZZZ	50	14:25																													
ZZZZZZ	50	14:30																													
ZZZZZZ	10	14:35																													
ZZZZZZ	50	14:40																													
ZZZZZZ	10	14:45																													
ZZZZZZ	10	14:50																													
CCV410586	1	14:55				X																									
CCB410587	1	14:59				X																									
ZZZZZZ	10	15:04																													
NRS2009SS15-B1	10	15:09				X																									
NRS2009SS15-B1L	50	15:14				X																									
NRS2009SS15-B1MS	10	15:19				X																									
NRS2009SS15-B1SD	10	15:24				X																									
NRS2009SS15-B1A	10	15:29				X																									
ZZZZZZ	10	15:34																													
ZZZZZZ	10	15:39																													
NRS2009SS06-B1	5	15:44				X																									
ZZZZZZ	10	15:48																													
CCV410598	1	15:53				X																									
CCV410599	1	15:56				X																									
CCB410600	1	16:01				X																									
ZZZZZZ	5	16:08																													
CCV410602	1	16:12				X																									
CCB410603	1	16:17				X																									
ZZZZZZ	10	16:22																													
NRS2009SS10-B1	10	16:27				X																									
ZZZZZZ	10	16:32																													

270606 1314

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Instrument ID Number : ICAP2 Method : P

Start Date : 6/22/2006 End Date : 6/26/2006

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
NRS2009SS12-B1	25	16:37				X																									
NRS2009SS12-B1L	125	16:42				X																									
NRS2009SS12-B1MS	25	16:47				X																									
NRS2009SS12-B1SD	25	16:52				X																									
NRS2009SS12-B1A	25	16:57				X																									
NRS2009SS03-B1	25	17:01				X																									
NRS2009SS04-B1	20	17:06				X																									
CCV410797	1	17:11				X																									
CCB410798	1	17:16				X																									
NRS2009SS07-B1	25	17:21				X																									
NRS2009FD03-B1	25	17:26				X																									
NRS2009SS11-B1	20	17:31				X																									
ZZZZZZ	10	17:36																													
ZZZZZZ	50	17:41																													
ZZZZZZ	1	17:47																													
ZZZZZZ	1	17:52																													
ZZZZZZ	1	17:56																													
ZZZZZZ	1	18:01																													
ZZZZZZ	5	18:06																													
CCV410809	1	18:11				X																									
CCB410810	1	18:16				X																									

270606 1314

Chain of Custody Documentation

270606 1314

DRMO Chain of Custody

2504066 - ELM

Project Site		NAPR DRMO				Analysis Requested												Project No. 315616.AC.FI
Project Manager		Russ Bowen (CH2M HILL)																
Contact Tel No.		813-874-0777																Lab Batch/SDG ID
Contact Address		4350 W. Cypress Street, Suite 600, Tampa, FL 33607																
Lab Name		PEL Labs																Lab Tel No./Fax No.
Lab Contact																		813-237-2805/813-248-1537
Lab Address		4420 Pendola Point Road Tampa,FL 33619																
Item	Sample ID	Station ID	Matrix	Date & Time Collected	Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)									Comments
1	NRS2009SB18-S1	NRS2009SB18	Soil	6/7/2006 0927	1			1										
2	NRS2009SB18-S3	NRS2009SB18	Soil	6/7/2006 1606	1			1										
3	NRS2009FD01-S3	NRS2009SB18	Soil	6/7/2006 1606	1			1										
4	NRS2009SB19-S1	NRS2009SB19	Soil	6/6/2006 1630	1			1										
5	NRS2009SB19-S3	NRS2009SB19	Soil	6/8/2006 1745	1			1										01
6	NRS2009FD02-S3	NRS2009SB19	Soil	6/8/2006 1745	1			1										02
7	NRS2009SB20-S1	NRS2009SB20	Soil	6/7/2006 1311	1			1										03
8	NRS2009SB20-S3	NRS2009SB20	Soil	6/8/2006 1725	1			1										04
9	NRS2009SB21-S1	NRS2009SB21	Soil	6/8/2006 1009	1			1										05
10	NRS2009SB21-S3	NRS2009SB21	Soil	6/8/2006 1032	1			1										06
11	NRS2009SB22-~~S3~~S1	NRS2009SB22	Soil	~~6/8~~/2006 0858	1			1										07
12	ELM			6/7														~~08~~ Misnumbered ELM 6/12/06

Sampled By: Kenji Butler	Date/Time: 6/9/2006 1200	Custody Seal: Y / N Relinquished By: [signature]	Date/Time: 6/9/06 ~~1500~~ KB 1300
Shipped Via: UPS FedEx Hand Other (Please specify):			
Samples Temperature and Condition Upon Receipt (for lab's use):			
Received By: Ed Morse Pel	Date/Time: 06/10/06 930	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks:

3 bc

Prepared by Kenji Butler 6/9/2006

2504066

DRMO Chain of Custody

2504066-ELM

Project Site		NAPR DRMO					Analysis Requested												Project No. 315616.AC.FI
Project Manager		Russ Bowen (CH2M HILL)																	
Contact Tel No.		813-874-0777																	Lab Batch/SDG ID
Contact Address		4350 W. Cypress Street, Suite 600, Tampa, FL 33607																	
Lab Name		PEL Labs																	Lab Tel No./Fax No.
Lab Contact																			813-237-2805/813-248-1537
Lab Address		4420 Pendola Point Road Tampa,FL 33619																	
Item	Sample ID	Station ID	Matrix	Date & Time Collected		Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)									Comments
1	NRS2009SS01-B1	NRS2009SS01	Soil	6/7/2006	1450	1	1												~~09~~ 08
2	NRS2009SS02-B1	NRS2009SS02	Soil	6/7/2006	1510	1	1												~~10~~ 09
3	NRS2009SS03-B1	NRS2009SS03	Soil	6/7/2006	1520	1	1												labeled wrong "S1" ~~11~~ 10
4	NRS2009SS04-B1	NRS2009SS04	Soil	6/7/2006	1530	1	1												~~12~~ 11
5	NRS2009SS05-B1	NRS2009SS05	Soil	6/9/2006	0720	1	1												~~13~~ 12
6	NRS2009SS06-B1	NRS2009SS06	Soil	6/9/2006	0735	1	1												~~14~~ 13
7	NRS2009SS07-B1	NRS2009SS07	Soil	6/9/2006	0740	1	1												~~15~~ 14
8	NRS2009FD03-B1	NRS2009SS07	Soil	6/9/2006	0740	1	1												~~16~~ 15
9	NRS2009SS08-B1	NRS2009SS08	Soil	6/9/2006	0800	1	1												~~17~~ 16
10	NRS2009SS09-B1	NRS2009SS09	Soil	6/9/2006	0807	1	1												~~18~~ 17
11	NRS2009SS10-B1	NRS2009SS10	Soil	6/9/2006	0810	1	1												~~19~~ 18
12	NRS2009SS11-B1	NRS2009SS11	Soil	6/9/2006	0814	1	1												~~20~~ 19

Mislabeled ECN

Sampled By: Kenji Butler	Date/Time: 6/9/2006 1200	Custody Seal: Y / N Relinquished By: [signature]	Date/Time: 6/9/06 1300
Shipped Via: UPS FedEx Hand Other (Please specify):			
Samples Temperature and Condition Upon Receipt (for lab's use):			
Received By: Ed Mon Pel	Date/Time: 06/10/06 930	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks:

3.6c

Prepared by Kenji Butler 6/9/2006

2504066

DRMO Chain of Custody

2504066- ELM

Project Site	NAPR DRMO
Project Manager	Russ Bowen (CH2M HILL)
Contact Tel No.	813-874-0777
Contact Address	4350 W. Cypress Street, Suite 600, Tampa, FL 33607
Lab Name	PEL Labs
Lab Contact	
Lab Address	4420 Pendola Point Road Tampa,FL 33619

Project No. 315616.AC.FI

Lab Batch/SDG ID

Lab Tel No./Fax No.

813-237-2805/813-248-1537

Item	Sample ID	Station ID	Matrix	Date & Time Collected	Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)									Comments
1	NRS2009SS12-B1	NRS2009SS12	Soil	6/9/2006 0822	3	3									20	21	22	Use Extra For MS/MSD ~~21, 22, 23~~
2	NRS2009SS13-B1	NRS2009SS13	Soil	6/9/2006 0835	1	1												~~24~~ 23
3	NRS2009SS14-B1	NRS2009SS14	Soil	6/9/2006 0855	1	1												~~25~~ 24
4	NRS2009SS15-B1	NRS2009SS15	Soil	6/9/2006 0905	3	3									25	26	27	Use Extra For MS/MSD ~~26, 27, 28~~
5	NRS2009SS16-B1	NRS2009SS16	Soil	6/9/2006 0920	1	1												~~28~~ misnumberd ELM
6	NRS2009SS17-B1	NRS2009SS17	Soil	6/9/2006 0925	1	1												
7	NRS2009FD04-B1	NRS2009SS17	Soil	6/9/2006 0925	1	1												
8	NRS2009SS18-B1	NRS2009SS18	Soil	6/9/2006 0930	1	1												
9	NRS2009SS19-B1	NRS2009SS19	Soil	6/9/2006 0950	1	1												
10	NRS2009SS20-B1	NRS2009SS20	Soil	6/9/2006 0955	1	1												
11	NRS2009SS21-B1	NRS2009SS21	Soil	6/9/2006 1000	1	1												
12	NRS2009FD05-B1	NRS2009SS21	Soil	6/9/2006 1000	1	1												

Sampled By: Kenji Butler | Date/Time: 6/9/2006 1200 | Custody Seal: Y / N | Relinquished By: [signature] | Date/Time: 6/9/06 1300

Shipped Via: UPS (FedEx) Hand Other (Please specify):

Samples Temperature and Condition Upon Receipt (for lab's use):

Received By: [signature]	Date/Time: 06/10/06 930	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks:

Prepared by Kenji Butler 6/9/2006

2504066

FedEx Express International Air Waybill

Origin Copy

FedEx Express Tracking Number 8525 7960 5760 Waybill Date

PACKAGE LABEL

COMMERCIAL INVOICE LABEL 8525796057 60

DELIVERY RECORD LABEL 8525796057 60

DELIVERY REATTEMPT LABEL 8525796057 60

1 From

Date 6/9/06 Sender's FedEx Account Number ~~0336-3482-0~~

Sender's Name Kenji Butler Phone 850-443-0010

Company CH2M Hill

Address Bldg 192, Forrestal Dr

Address

City Ceiba State/Province PR

Country USA ZIP/Postal Code 00735

2 To

Recipient's Name Sample Custody Phone 813-237-2805

Company PEL Labs

Address 4420 Pendola Point Road Dept./Floor

Address

City Tampa State/Province FL

Country USA ZIP/Postal Code 33619

Recipient's Tax ID number for Customs purposes
e.g., GST/RFC/VAT/IN/EIN, or as locally required

3 Shipment Information

☐ For EU Only: Tick here if goods are not in free circulation and provide C.I.

Total Packages (Shipper's Load and Count/SLAC): 2 Total Weight: 77.35 ☒ lbs ☐ kg DIM L / W / H ☐ in. ☐ cm

Commodity Description REQUIRED	Harmonized Code	Country of Manufacture	Value for Customs REQUIRED
Sample Kits			$100.00
Soil Samples			$1,200.00
Water Samples			$500.00

For U.S. Export Only: Check One
☐ No SED required per Exemption
☐ No SED required, value $2500 or less per Schedule B Commodity number
Total Declared Value for Carriage
☐ SED attached (provide export license no. and exp. date or license exception symbol, w/ECCN if applicable)
Total Value for Customs (Specify Currency) $1,600.00

4 Express Package Service

Packages up to 150 lbs. / 68 kg
For packages over 150 lbs. (68 kg), use the FedEx Expanded Service Intl. Air Waybill.

1 ☒ FedEx Intl. Priority
6 ☐ FedEx Intl. First — Available to select locations. Higher rates apply.
3 ☐ FedEx Intl. Economy — FedEx Envelope and FedEx Pak rate not available

Not all services and options are available to all destinations. Dangerous goods cannot be shipped using this Air Waybill.

5 Packaging

*These unique brown boxes with special pricing are provided by FedEx for FedEx Intl. Priority only.

6 ☐ FedEx Envelope 2 ☐ FedEx Pak 3 ☐ FedEx Box 4 ☐ FedEx Tube
1 ☒ Other PW ☐ FedEx 10kg Box* PX ☐ FedEx 25kg Box*

6 Special Handling

1 ☐ HOLD at FedEx Location 3 ☒ SATURDAY Delivery — Available to select locations for FedEx Intl. Priority only

7a Payment *Bill transportation charges to:*

Enter FedEx Acct. No. or Credit Card No. below.
1 ☒ Sender (Acct. No. in Section 1 will be billed) 2 ☒ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash Check/Cheque

FedEx Acct. No. 0336 3482-0
Credit Card No.
Credit Card Exp. Date
Total Transportation
Specify Currency

7b Payment *Bill duties and taxes to:*

ALL shipments can be subject to Customs charges, which FedEx does not estimate prior to clearance.

Enter FedEx Acct. No. below.
1 ☒ Sender (Acct. No. in Section 1 will be billed) 2 ☐ Recipient 3 ☐ Third Party 5 ☐ Cash Check/Cheque

FedEx Acct. No.

8 Your Internal Billing Reference

First 24 characters will appear on invoice.

315616.AC.FI

9 Required Signature

Use of this Air Waybill constitutes your agreement to the Conditions of Contract on the back of this Air Waybill, and you represent that this shipment does not require a U.S. State Department License or contain dangerous goods. Certain international treaties, including the Warsaw Convention, may apply to this shipment and limit our liability for damage, loss, or delay, as described in the Conditions of Contract. **WARNING:** These commodities, technology, or software were exported from the United States in accordance with Export Administration Regulations. Diversion contrary to U.S. law prohibited.

Sender's Signature:

This is not authorization to deliver this shipment without a recipient signature.

Received above shipment in good order and condition. We agree to pay all charges, including Customs duties and taxes as applicable, and we agree to the Conditions of Contract as stated on the reverse side of the Recipient's Copy.

Recipient's Signature:

500

PART 158410
Rev. Date 10/03
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Form ID No.

FedEx Tracking Number 8525 7960 5760 0402

Origin Station ID	Destination Station ID	URSA Routing	Handling Units
NBCP	XO MCFA	TPA	Total Volume (cm)

Received At: 1 ☐ Reg. Stop 2 ☐ On-Call Stop 3 ☐ Drop Box 4 ☐ World Service Center 5 ☒ Station

Forms Attached: ☐ CI ☐ SED ☐ CO

Base Charges FedEx Emp. # 56904 Declared Val. Chrg. Audit Emp. # Other ODA/OPA Date 6-9 Time Credit Card Auth. Del. Courier Emp. # Date Time

SRC 2/05

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2504066

125

SAMPLE RECEIPT CONFIRMATION SHEET

Client Information

SDG:	2504066	**Req:**	70910
Client:	CH2M Hill	**Project:**	Buildings 2009 for 2006
Level:	3	**Date Rec'd:**	6/10/06 9:30:00 AM
Rec'd via:	Fed-Ex	**Due Date:**	07/03/06

Sample Verification

Samples/Cooler Secure?	Yes	**All Samples on COC accounted For?**	Yes
Temperature of Samples(Celsius)	3.6	**All Samples Rec'd Intact?**	Yes
pH Verified?	No	**Sample Vol. Stuff. For Analysis?**	Yes
pH WNL?	No	**Samples Rec'd W/I Hold Time?**	Yes
Soil Origin (Domestic/Foreign):	Domestic	**Are All Samples to be Analyzed?**	Yes
Site Location/Project on COC?	Yes	**Correct Sample Containers?**	Yes
Client Project # on COC?	Yes	**COC Comments written on COC?**	Yes
Project Mgr. Indicated on COC?	Yes	**Samplers Initials on COC?**	Yes
COC relinquished/Dated by Client?	Yes	**Sample Date/Time Indicated?**	Yes
COC Received/Dated by PEL?	Yes	**TAT Requested:**	STD
Specific Subcontract Indicated?	No	**Client Requests Verbal Results?**	No
Samples Received By	Fed-Ex	**Client Requests Faxed Results?**	No
PEL to Conduct ALL Analyses?	Yes		

Subcontract Analysis

Parameter	Due Date	Via	Lab Name	Comments

PEER REVIEW _____ **PM REVIEW:** _____

Client: CH2M Hill

WONo: 2504066 **Profile Name:** U.S. NAPR **Profile #:** 70910

MATRIX ***S***

Sample #	Parameter		Relinquished	Received	Date	Time
01 - 27	Dry Weight	Dry Weight		SAD	6-15-06	11:05
01 - 27	Dry Weight	Dry Weight	SAD		6-15-06	12:00
08 - 27	6010	Metals		MB	6/19/06	10:00
08 - 27	6010	Metals	N/A			
01 - 07	8015	DRO		GG	6/15/06	6am
01 - 07	8015	DRO	GG		6/15/06	945am

Additional:

1-7	Dry weight		SAD	6-14-06	9:00
1-7	Dry weight	SAD		6/14/06	10:30

Comments:

Addendum

270606 1314

Letter of Acceptance

Customer Name: CH2M Hill

Date and Time Received: 6/10/2006 9:30:00 AM

Date to be Reported: 7/1/2006

Laboratory Submission Number/SDG: 2504066

Get Detailed Analyte List here: www.pelab.com/webdms/Default.asp?LoaSDG=2504066

Project: NAPR DRMO 315616.AC.FI

Samples: The submission consisted of 27 samples with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: 6010, 8015.

Sample Custody/COC discrepancies:

On page 2, Item # 11 on COC has ID NRS2009SB22-S3 date: 6/8/2006. Container is labeled NRS2009SB22-S1 date: 6/7/2006. On page 3, Item # 3 on COC has ID NRS2009SS03-B1. Container is labeled NRS2009SS03-S1. Client was notified and clarified sample IDs.

Notes:

None.

Distribution of Report to:

CH2M Hill
Attn: Kevin Sanders
Phone: W 352-335-5877

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. PEL letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials

Log-in Report

Level: 3

Total of: 27 analyses on 27 samples (including QC) *12-Jun-06*

Report/SDG #: 2504066

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB19-S3	250406601	NRS2009SB19	SO	6/8/2006 5:45:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FD02-S3	250406602	NRS2009SB19	SO	6/8/2006 5:45:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB20-S1	250406603	NRS2009SB20	SO	6/7/2006 1:11:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB20-S3	250406604	NRS2009SB20	SO	6/8/2006 5:25:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB21-S1	250406605	NRS2009SB21	SO	6/8/2006 10:09:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB21-S3	250406606	NRS2009SB21	SO	6/8/2006 10:32:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

Report/SDG #: 2504066

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SB22-S1	250406607	NRS2009SB22	SO	6/8/2006 8:58:00 AM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS01-B1	250406608	NRS2009SS01	SO	6/7/2006 2:50:00 PM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS02-B1	250406609	NRS2009SS02	SO	6/7/2006 3:10:00 PM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS03-B1	250406610	NRS2009SS03	SO	6/7/2006 3:20:00 PM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS04-B1	250406611	NRS2009SS04	SO	6/7/2006 3:30:00 PM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS05-B1	250406612	NRS2009SS05	SO	6/9/2006 7:20:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

Report/SDG #: 2504066

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS06-B1	250406613	NRS2009SS06	SO	6/9/2006 7:35:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS07-B1	250406614	NRS2009SS07	SO	6/9/2006 7:40:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FD03-B1	250406615	NRS2009SS07	SO	6/9/2006 7:40:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS08-B1	250406616	NRS2009SS08	SO	6/9/2006 8:00:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS09-B1	250406617	NRS2009SS09	SO	6/9/2006 8:07:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS10-B1	250406618	NRS2009SS10	SO	6/9/2006 8:10:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

Report/SDG #: 2504066

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS11-B1	250406619	NRS2009SS11	SO	6/9/2006 8:14:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS12-B1	250406620	NRS2009SS12	SO	6/9/2006 8:22:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS12-B1MS	250406621	NRS2009SS12	SQ	6/9/2006 8:22:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS12-B1SD	250406622	NRS2009SS12	SQ	6/9/2006 8:22:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS13-B1	250406623	NRS2009SS13	SO	6/9/2006 8:35:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS14-B1	250406624	NRS2009SS14	SO	6/9/2006 8:55:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

Report/SDG #: 2504066

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS15-B1	250406625	NRS2009SS15	SO	6/9/2006 9:05:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS15-B1MS	250406626	NRS2009SS15	SQ	6/9/2006 9:05:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS15-B1SD	250406627	NRS2009SS15	SQ	6/9/2006 9:05:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

John Heyman

From: Kenji.Butler@CH2M.com
Sent: Monday, June 12, 2006 11:06 AM
To: John Heyman; kevin.sanders@ch2m.com; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

John,

The correct information for page 2, item #11 should be NRS2009SB22-S1 date: 6/7/2006 Container is correct.
The correct information for page 3, item #3 should be NRS2009SS03-B1 The sample label is incorrect.
The correct information for page 5, item #3 should be NRS2009SS24-B1 Container is correct

If you have any more questions, please let me know and I will answer them as soon as possible.

Kenji Butler

From: John Heyman [mailto:jheyman@PELAB.com]
Sent: Monday, June 12, 2006 10:54 AM
To: Sanders, Kevin/GNV; Butler, Kenji/TPA; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

Kevin:

We have a few sample ID issues. The hand written notes on this COC copy are mine.

On page 2, Item # 11 on COC has ID NRS2009SB22-S3 date: 6/8/2006. Container is labeled NRS2009SB22-S1 date: 6/7/2006.

On page 3, Item # 3 on COC has ID NRS2009SS03-B1. Container is labeled NRS2009SS03-S1.

On page 5, Item # 3 on COC has ID NRS2009SS23-B1. Container is labeled NRS2009SS24-B1.

Please advise.

We also received a cooler of empty containers. I just want to make sure that you did not sample 8260 Encores, or 8015 GRO.

Thanks!
John

-----Original Message-----
From: Kevin.Sanders@CH2M.com [mailto:Kevin.Sanders@CH2M.com]
Sent: Monday, June 12, 2006 9:02 AM
To: John Heyman; kenji.butler@ch2m.com; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

appreciated John.

From: John Heyman [mailto:jheyman@PELAB.com]
Sent: Monday, June 12, 2006 9:00 AM
To: Sanders, Kevin/GNV; Butler, Kenji/TPA; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

Coolers came in fine on Saturday. Everything looks good at first glance. I'll get a LOA and copy of the COC out to you this morning.

Thanks!
John

-----Original Message-----
From: Kevin.Sanders@CH2M.com [mailto:Kevin.Sanders@CH2M.com]
Sent: Monday, June 12, 2006 8:57 AM
To: kenji.butler@ch2m.com; Mark Gudnason
Cc: John Heyman; LogIn
Subject: RE: DRMO samples expected Saturday

Do we have lift-off ? Delivery, receipt, COC, all intact and understandable ?

Kevin A. Sanders
Senior Environmental Chemist
CH2M-Hill/GNV
3011 SW Williston Road
Gainesville, FL 32608-3928
(352)335-5877 ext 52436
(352)335-2959 FAX
ksanders@ch2m.com

Working Hours: 0830-1730

From: Butler, Kenji/TPA
Sent: Saturday, June 10, 2006 7:23 AM
To: Mark Gudnason
Cc: Sanders, Kevin/GNV; John Heyman; LogIn
Subject: RE: DRMO samples expected Saturday

The tracking number for the two coolers is 8525 7960 5760. If you have any questions, please feel free to contact me at 850-443-0010. Thank you very much.

Kenji Butler

From: Mark Gudnason [mailto:mgudnason@PELAB.com]
Sent: Thursday, June 08, 2006 4:51 PM
To: Butler, Kenji/TPA
Cc: Sanders, Kevin/GNV; John Heyman; LogIn
Subject: DRMO samples expected Saturday
Importance: High

Kenji, to follow up on our conversation please have FedEx mark the coolers "Saturday Delivery" place the "Saturday Delivery" stickers as well.

Please "reply to all" when you email the FedEx tracking numbers.

Have a good weekend.

Thanks.

Mark Gudnason
Project Manager
PEL Laboratories, Inc.
4420 Pendola Point Road
Tampa, FL 33619
Phone: 813-247-2805 ext. 242
FAX: 813-248-1537
e-mail: mgudnason@pelab.com

Visit our website at www.pelab.com

John Heyman

From: John Heyman
Sent: Tuesday, June 27, 2006 11:16 AM
To: 'Kevin.Sanders@CH2M.com'
Subject: FW: 2504066 (US NAPR) 6010

Good morning.

-----Original Message-----
From: Linda Lee Gates
Sent: Tuesday, June 27, 2006 11:15 AM
To: Project Managers
Subject: 2504066 (US NAPR) 6010

Samples NRS2009FD03-B1, NRS2009SS03-B1, NRS2009SS07-B1, NRS2009SS12-B1 required a 1:25 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS02-B1, NRS2009SS05-B1, NRS2009SS06-B1, NRS2009SS14-B1 required a 1:5 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS04-B1, NRS2009SS11-B1 required a 1:20 dilution due to matrix interference with the following analyte (s): Arsenic.

Samples NRS2009SS10-B1, NRS2009SS15-B1 required a 1:10 dilution due to matrix interference with the following analyte (s): Arsenic.

Please inform client.

Pace Analytical®
del Caribe

Pace Analytical, Inc.
Puerto Rico Laboratory
El Retiro Industrial Zone
Calle B&C, P.O. Box 325
San German, PR 00683
Phone: 787.892.2650
Fax: 787.892.1054
www.pacelabs.com

August 23, 2006

Mr. Brian Spann
PEL Laboratories, Inc.
4420 Pendola Point Road
Tampa, F.L. 33619

RE: Project: NAPR DRMO 315616.AC.FI
Laboratory Submission Number / SDG: 2504068 R3

Dear Mr. Spann:

I certify that the contents of this package were verified and found technically complete. On this project the following fifteen (15) Samples were evaluated:

NRS2009EB01-0606, NRS2009FB01-0606, NRS2009SS16-B1, NRS2009SS17-B1, NRS2009FD04-B1, NRS2009SS18-B1, NRS2009SS19-B1, NRS2009SS20-B1, NRS2009SS21-B1, NRS2009FD05-B1, NRS2009SS22-B1, NRS2009SS23-B1, NRS2009SS24-B1, NRS2009EB02-0606, NRS2009FB02-0606

Two (2) aqueous samples were prepared by method SW846 EPA 3510C for DRO 8015 semi-volatiles analysis and analyzed for Diesel Range Organics fraction for DRO by Method EPA SW846 Modified 8015 analyte Range C10-C28. Eleven (11) soil samples were prepared by method EPA 3050B and analyzed by EPA Method 6010B for ICP metals (Arsenic). Two (2) aqueous samples were prepared by method EPA 3010A and analyzed by EPA Method 6010B for ICP metals (Arsenic).

Certified by:

Sandra Laboy, QA Analyst
Chemist License 4122

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Lic. Sandra Y. Laboy Olivieri
Lic. # 4122
A 1099331
QUIMICO LICENCIADO

Should you have any questions regarding this package verification, please contact us at 787-892-2680.

Milton Martinez
Project Manager
Pace Analytical, Inc.

PEL Laboratories, Inc.

Customer Name:	CH2M Hill
Date and Time Received:	6/10/06 9:30:00 AM
Date Reported:	6/27/06
Laboratory Submission Number/SDG:	2504068
Project:	NAPR DRMO 315616.AC.FI

Samples: The submission consisted of 15 samples with sample identification shown in the attached data tables.

Tests: The samples were analyzed for the methods listed on the attached table of contents.

Results: See the attached data tables for results.

Distribution of Report to:

CH2M Hill
Attn: Kevin Sanders
Phone: W 352-335-5877

Respectfully Submitted,

Brian Spann
Laboratory Manager
PEL Laboratories, Inc.

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. PEL letters and reports are for the exclusive use of the client to whom they are addressed. Our Letters and reports apply to the sample tested and are n necessarily indicative of the qualities of apparently identical or similar materials

4420 Pendola Point Road • Tampa, Florida 33619
(813)247-2805 • FAX: (813)248-1537
Website: www.pelab.com

Organics **2**
METHOD 8015 GC 8015 DRO ORGANICS..... 5
Sample Data 9
QC Summary 12
Standards Data 18

Inorganics..... **27**
METALS DATA PACKAGE TOTALS 30
Sample Data 35
QC Summary 49

Chain of Custody Documentation..... **101**

Addendum **108**

EXECUTIVE SUMMARY - Detection Highlights

2504068

SAMPLE ID: NRS2009FB02-0606

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Arsenic	2.13 B	5	UG/L	SW6010B

SAMPLE ID: NRS2009SS22-B1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Arsenic	3.33	1.58	MG/KG	SW6010B

270606 1155

Organics

270606 1155

Organic Data Qualifiers

U Indicates the analyte was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that analyte. The reporting limit can vary from sample to sample depending on dilution factors or the percent moisture adjustment when indicated.

J Indicates estimated value. It is used when the data indicates the presence of an analyte above the method detection limit (MDL) yet lower than the reporting limit.

B Indicates the analyte was found in the associated blank as well as in the sample. The notation indicates possible contamination of the sample.

E Indicates the value reported is above the highest calibration standard for that analyte. The sample should be analyzed at an appropriate dilution. "E" qualified values are estimations and the diluted result may be reported on another Form 1.

D Indicates the analyte has been identified in a dilution reanalysis. "D" qualifiers are used for samples that have been analyzed at a lesser dilution than required for accurate quantitation.

C The "C" qualifier indicates the presence of this analyte has been confirmed by GC/MS analysis.

P This qualifier is used for pesticide / Aroclor target analytes where there is greater than 25% difference for the detected concentration between the two GC columns.

N This qualifier indicates presumptive evidence of an analyte. This qualifier is only used for tentatively identified compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

X Data flagged as rejected by analyst utilizing analytical judgement.

270606 1155

Organic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for organic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

270606 1155

GC 8015 DRO ORGANICS

METHOD 8015

270606 1155

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504068

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHODS

EPA SW846 Modified 8015
Analyte range C10-C28

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510C for DRO 8015 semi-volatiles analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

This method does not require the use of internal standards.

CASE NARRATIVE
GC SEMIVOLATILE ORGANICS

PEL Lab Reference No./SDG: 2504068

Client: CH2M Hill

F. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and PEL, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: Thomas Scott **DATE:** **06/23/2006**

W:\Narratives\SemiVols\2504\2504068_8015.doc

8015 DRO ORGANIC CROSS REFERENCE TABLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Method: 8015

EPA Sample No	Lab Sample ID
NRS2009EB01-0606	250406812
NRS2009FB01-0606	250406814

270606 1155

Sample Data

270606 1155

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009EB01-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406812 Lab File ID: 68-12.D

Sample wt/vol: 1000 Units: ML Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/20/06 Time: 1617

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: FIELD QC Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	100	U

270606 1155

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FB01-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406814 Lab File ID: 68-14.D

Sample wt/vol: 1000 Units: ML Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/20/06 Time: 1647

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: FIELD QC Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	100	U

270606 1155

Form I

QC Summary

270606 1155

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

11114MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 215726 Lab File ID: 1114MBK.D

Sample wt/vol: 1000 Units: ML Date Received: 06/15/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/20/06 Time: 1346

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	100	U

270606 1155

Form I

8015 DRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.: 11114MBK

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Lab File ID: 1114MBK.D Lab Sample ID: 215726

Instrument ID: SFID02 Date Extracted: 06/15/06

Matrix: WATER Date Analyzed: 06/20/06

Level:(low/med) LOW Time Analyzed: 1346

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	11114LCS	215727	1114LCS.D	06/20/06	1416
2	NRS2009EB01-0606	250406812	68-12.D	06/20/06	1617
3	NRS2009FB01-0606	250406814	68-14.D	06/20/06	1647

COMMENTS:

Page 1 of 1

270606 1155

Form IV

2A

WATER 8015 DRO ORGANIC SURROGATE RECOVERY

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG NO.: 2504068

Column(1): RTX-5 ID: 0.53 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
11114LCS	100.0	80.0					0
11114MBK	85.0	60.0					0
NRS2009EB01-0606	100.0	70.0					0
NRS2009FB01-0606	100.0	80.0					0

Control Limits

S1	=	Triacontane	40	-	140
S2	=	o-Terphenyl Surrogate	57	-	132

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

270606 1155

8015 DRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 06/19/06

Instrument ID: SFID02

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 7.55 S2 : 4.79

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
1	STD408788	12785	DROCAL6.D	06/19/06	1610	7.61	4.82
2	STD408787	12784	DROCAL5.D	06/19/06	1640	7.5	4.77
3	STD408786	12783	DROCAL4.D	06/19/06	1710	7.55	4.79
4	STD408785	12782	DROCAL3.D	06/19/06	1741	7.52	4.78
5	STD408784	12781	DROCAL2.D	06/19/06	1811	7.49	4.77
6	STD408783	12780	DROCAL1.D	06/19/06	1841	7.53	4.79
7	SSC408791	12786	DROSECCV.D	06/19/06	1911	7.45	4.77
8	CCV408370	12786	DROCCV1.D	06/20/06	1316	7.68	4.84
9	11114MBK	215726	1114MBK.D	06/20/06	1346	7.56	4.79
10	11114LCS	215727	1114LCS.D	06/20/06	1416	7.56	4.79
11	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/20/06	1447		
12	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/20/06	1517		
13	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/20/06	1547		
14	NRS2009EB01-0606	250406812	68-12.D	06/20/06	1617	7.5	4.77
15	NRS2009FB01-0606	250406814	68-14.D	06/20/06	1647	7.49	4.77
16	CCV408789	12786	DROCCV2.D	06/20/06	1848	7.52	4.77
17	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/21/06	0020		
18	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/21/06	0621		
19	ZZZZZZ	ZZZZZZ	ZZZZZZ	06/21/06	0952		

			QC LIMITS
S1	=	Triacontane	(+/- 0.15 MINUTES)
S2	=	o-Terphenyl Surrogate	(+/- 0.1 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

Page 1 of 1

270606 1155

FORM VIII

3

8015 DRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

11114LCS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

COMPOUND	SPIKE ADDED UG/L	LCS CONCENTRATION UG/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH C10-C28	500	360	72.0		30.0	30 - 123

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

270606 1155

Form III

Standards Data

270606 1155

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

LAB FILE ID: RRF0.025 =DROCAL2.D RRF0.1 =DROCAL1.D
RRF0.5 =DROCAL3.D RRF1 =DROCAL4.D RRF2 =DROCAL5.D

COMPOUND	RRF0.025	RRF0.1	RRF0.5	RRF1	RRF2
TPH C10-C28	156406560	70895410	38846792	34648531	35551508.5
==========					
Triacontane(SURR)	26046240	22183600	31021885	27046830	28291890
o-Terphenyl Surrogate(SURR)	37692780	37544690	45824340	39389960	39657510

270606 1155

FORM VI

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

LAB FILE ID:	RRF4 =DROCAL6.D				
COMPOUND	RRF4				
TPH C10-C28	33805286				
==========					
Triacontane(SURR)	28246505				
o-Terphenyl Surrogate(SURR)	42062560				

270606 1155

FORM VI

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

COMPOUND	CURVE	COEFFICIENTS AO	COEFFICIENTS A1	%RSD OR R^2
TPH C10-C28	LINR	-0.0705819	2.991599E-08	0.99905
==========				
Triacontane(SURR)	AVRG		27139491.7	10.9
o-Terphenyl Surrogate(SURR)	AVRG		40361973.3	7.8

270606 1155

FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT1: DROCAL2.D RT2: DROCAL1.D
RT3: DROCAL3.D RT4: DROCAL4.D RT5: DROCAL5.D

COMPOUND	RT1	RT2	RT3	RT4	RT5	MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703	4.703	4.703	4.703	4.703			
==========								
Triacontane(SURR)	7.487	7.530	7.523	7.550	7.503			
o-Terphenyl Surrogate(SURR)	4.773	4.787	4.780	4.787	4.773			

270606 1155 FORM VI

6

8015 DRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 Calibration Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 1610 End: 1841

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT6: DROCAL6.D

COMPOUND	RT6					MIDCAL RT	RT WINDOW FROM	TO
TPH C10-C28	4.703					4.703	2.033	7.372
==========								
Triacontane(SURR)	7.610					7.550	7.401	7.699
o-Terphenyl Surrogate(SURR)	4.817					4.787	4.691	4.882

270606 1155

FORM VI

7SSC

8015 DRO ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 CalibrationDate: 06/19/06 Time: 1911

CCV ID: SSC408791 Lab File ID: DROSECCV.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF	%D
TPH C10-C28	61692348	38824034	9.0
==========			
Triacontane(SURR)	27139492	26695515	1.6
o-Terphenyl Surrogate(SURR)	40361973	37782810	6.4

270606 1155

FORM VII

7

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 CalibrationDate: 06/20/06 Time: 1316

CCV ID: CCV408370 Lab File ID: DROCCV1.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61692348	34679337	0.1
==========			
Triacontane(SURR)	27139492	29050645	7.0
o-Terphenyl Surrogate(SURR)	40361973	43254440	7.2

270606 1155

FORM VII

8015 DRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID: SFID02 CalibrationDate: 06/20/06 Time: 1848

CCV ID: CCV408789 Lab File ID: DROCCV2.D Init. Calib. Date Begin: 06/19/06 End: 06/19/06

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	%D
TPH C10-C28	61692348	39519604	11.0
==========			
Triacontane(SURR)	27139492	26654025	1.8
o-Terphenyl Surrogate(SURR)	40361973	39851760	1.3

270606 1155

FORM VII

Inorganics

270606 1155

Inorganic Data Qualifiers

C (Concentration) Qualifier - Entries and their meanings are:

B The reported value obtained was less than the RL but greater than or equal to the MDL.

E The reported value obtained was over calibration or linear range.

U The reported value obtained was less than the MDL or was not detected.

Q Qualifier - Entries and their meanings are:

U The reported value is estimated because of interference. An explanatory comment must be included under "Comments" on the Cover Page if the problem applies to all samples in this data package or on the individual FORM 1 if it is an isolated problem.

M Duplicate injection precision was not met (two analyses of the same sample did not agree).

N Spiked sample recovery not within control limits.

E Serial Dilution percent difference not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA).

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.

***** Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

X The data is flagged as rejected by analyst utilizing analytical judgement.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can apear in the same field.

M (Method) Qualifier - Enter one of the following:

P ICP
A Flame AA
F Furnace AA
CV Manual Cold Vapor AA
TC Total Organic Carbon
AS Semi-Automated Spectrophotometric
CA Midi-Distillation Spectrophotometric
T Titrimetric
C Manual Spectrophotometric
GR Gravimetric
NR Analyte was not required by your lab

270606 1155

Inorganic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for inorganic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

A Post Digestion Spike.

L Serial Dilution.

270606 1155

METALS DATA PACKAGE
TOTALS

270606 1155

CASE NARRATIVE
METALS

PEL Lab Reference No./SDG: 2504068

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHOD

Analyses were performed according to PEL Laboratory's Standard Operating Procedures and EPA Method 6010B for ICP metals.

IV. PREPARATION

Soil samples were prepared according to PEL Laboratory's Standard Operating Procedures and EPA Method 3050B.
Water samples were prepared according to PEL Laboratory's Standard Operating Procedures and EPA Method 3010A.

V. ANALYSIS

A. Calibration:
All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:
All acceptance criteria were met. No action required. The following ICB/CCB(s) had element concentrations below the RL:

ICB408267 was analyzed on 06/20/06 10:33. The following analyte(s) were detected below RL: Arsenic at 3.19 UG/L.
CCB408494 was analyzed on 06/20/06 16:49. The following analyte(s) were detected below RL: Arsenic at 1.82 UG/L.

ICB409267 was analyzed on 06/22/06 11:52. The following analyte(s) were detected below RL: Arsenic at 4.15 UG/L.
CCB409690 was analyzed on 06/22/06 17:12. The following analyte(s) were detected below RL: Arsenic at 3.86 UG/L.
CCB409704 was analyzed on 06/22/06 18:21. The following analyte(s) were detected below RL: Arsenic at 3.15 UG/L.
CCB409716 was analyzed on 06/22/06 19:21. The following analyte(s) were detected below RL: Arsenic at 2.37 UG/L.

2. Method Blanks:
All acceptance criteria were met with the exception of:
Blank 216144BLK was analyzed with the soil samples on 06/22/06. The following analyte(s) were detected below RL: Arsenic at 0.249 MG/KG.

Blank 215834BLK was analyzed with the water samples on 06/20/06. The following analyte(s) were detected below RL: Arsenic at 2.2 UG/L.
Samples coded accordingly.

CASE NARRATIVE
METALS

PEL Lab Reference No./SDG: 2504068

Client: CH2M Hill

C. Spikes:

1. **Laboratory Control Spikes (LCS):**
   An LCS/LCSD set was analyzed.
   All percent recovery and relative percent difference (RPD) criteria were met.

2. **Post Digestion Spike:**
   All acceptance criteria were met with the exception of:
   Post Digestion Spike NRS2009SS16-B1A was analyzed with the soil samples on 06/26/06. The following analyte(s) were recovered below criteria: Arsenic at 65.2 % with criteria of (80-120).

3. **Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):**
   No spikes requested by client.

D. Duplicate:
No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:
All acceptance criteria were met.

F. ICP Interference Check Samples:
All acceptance criteria were met.

G. Samples:
Sample analysis proceeded normally.

Samples NRS2009FD04-B1, NRS2009SS17-B1, NRS2009SS18-B1, NRS2009SS19-B1 required a 1:50 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009FD05-B1, NRS2009SS21-B1 required a 1:25 dilution due to matrix interference with the following analyte(s): Arsenic.

Sample NRS2009SS16-B1 required a 1:20 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS20-B1, NRS2009SS23-B1 required a 1:10 dilution due to matrix interference with the following analyte(s): Arsenic.

Sample NRS2009SS22-B1 required a 1:5 dilution due to matrix interference with the following analyte(s): Arsenic.

CASE NARRATIVE
METALS

PEL Lab Reference No./SDG: 2504068

Client: CH2M Hill

I certify that this data package is in compliance with the terms and conditions agreed to by the client and PEL, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: Linda Lee M. Gates **DATE: 06/26/2006**

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.

Lab Code : PEL Case No. SDG No.: 2504068

SOW No.:

EPA Sample No	Lab Sample ID
NRS2009SS16-B1	250406801
NRS2009SS17-B1	250406802
NRS2009FD04-B1	250406803
NRS2009SS18-B1	250406804
NRS2009SS19-B1	250406805
NRS2009SS20-B1	250406806
NRS2009SS21-B1	250406807
NRS2009FD05-B1	250406808
NRS2009SS22-B1	250406809
NRS2009SS23-B1	250406810
NRS2009SS24-B1	250406811
NRS2009EB02-0606	250406813
NRS2009FB02-0606	250406815

Were ICP interelement corrections applied? Yes/No Yes

Were ICP background corrections applied? Yes/No Yes

If yes - were raw data generated before application of background corrections? Yes/No No

Comments:

270606 1155

Sample Data

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS16-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406801

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 95.4 Station ID: NRS2009SS16

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.37	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS17-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406802

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 98.5 Station ID: NRS2009SS17

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	4.94	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD04-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406803

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 98.3 Station ID: NRS2009SS17

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	5.7	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS18-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406804

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 95.6 Station ID: NRS2009SS18

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	5.44	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS19-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406805

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 85.4 Station ID: NRS2009SS19

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	5.71	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS20-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406806

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 83.7 Station ID: NRS2009SS20

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.18	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS21-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406807

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 83.3 Station ID: NRS2009SS21

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.3	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD05-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406808

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 84.4 Station ID: NRS2009SS21

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.17	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS22-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406809

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 90.2 Station ID: NRS2009SS22

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.33			P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS23-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406810

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 89.5 Station ID: NRS2009SS23

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.2	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS24-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406811

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 93.2 Station ID: NRS2009SS24

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.104	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009EB02-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406813

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 0 Station ID: FIELD QC

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.8	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FB02-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406815

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 0 Station ID: FIELD QC

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.13	B		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1155

QC Summary

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source: 12852

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic	400	389.000	97.2	500	507.000	101.4	517.000	103.4	P

ICV IDs: P= ICV408266

CCV1 IDs: P= CCV408272

CCV2 IDs: P= CCV408284

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	509.000	101.8	515.000	103.0	P

ICV IDs:

CCV1 IDs: P= CCV408336

CCV2 IDs: P= CCV408363

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	505.000	101.0	504.000	100.8	P

ICV IDs:

CCV1 IDs: P= CCV408419

CCV2 IDs: P= CCV408486

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	499.000	99.8	495.000	99.0	P

ICV IDs:

CCV1 IDs: P= CCV408493

CCV2 IDs: P= CCV408505

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source: 12852

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic	400	383.000	95.8	500	501.000	100.2	503.000	100.6	P

ICV IDs: P= ICV409266

CCV1 IDs: P= CCV409272

CCV2 IDs: P= CCV409284

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	480.000	96.0	490.000	98.0	P

ICV IDs:

CCV1 IDs: P= CCV409663

CCV2 IDs: P= CCV409675

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	472.000	94.4	507.000	101.4	P

ICV IDs:

CCV1 IDs: P= CCV409677

CCV2 IDs: P= CCV409687

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	497.000	99.4	490.000	98.0	P

ICV IDs:

CCV1 IDs: P= CCV409689

CCV2 IDs: P= CCV409703

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	495.000	99.0			P

ICV IDs:

CCV1 IDs: P= CCV409715

CCV2 IDs:

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source: 12852

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic	400	400.000	100.0	500	516.000	103.2	506.000	101.2	P

ICV IDs: P= ICV410251

CCV1 IDs: P= CCV410257

CCV2 IDs: P= CCV410269

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	486.000	97.2	542.000	108.4	P

ICV IDs:

CCV1 IDs: P= CCV410281

CCV2 IDs: P= CCV410574

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	506.000	101.2	548.000	109.6	P

ICV IDs:

CCV1 IDs: P= CCV410586

CCV2 IDs: P= CCV410598

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Initial Calibration Source:

Continuing Calibration Source: 12428

Concentration Units: (UG/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Arsenic				500	549.000	109.8	533.000	106.6	P

ICV IDs:

CCV1 IDs: P= CCV410599

CCV2 IDs: P= CCV410602

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil): SOIL

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/KG

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic	3.19	B	1.8	U	2.57	B	4.09	B	0.249	B	P

ICB IDs: P= ICB408267

CCB1 IDs: P= CCB408273

CCB2 IDs: P= CCB408285

CCB3 IDs: P= CCB408337

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil): WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): UG/L

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			3.62	B	3.22	B	1.8	U	2.2	B	P

ICB IDs:

CCB1 IDs: P= CCB408364

CCB2 IDs: P= CCB408420

CCB3 IDs: P= CCB408487

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.82	B	1.8	U					P

ICB IDs:

CCB1 IDs: P= CCB408494

CCB2 IDs: P= CCB408506

CCB3 IDs:

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BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic	4.15	B	3.89	B	2.76	B	4.9	B			P

ICB IDs: P= ICB409267

CCB1 IDs: P= CCB409273

CCB2 IDs: P= CCB409285

CCB3 IDs: P= CCB409664

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			2.3	B	1.8	U	3.56	B			P

ICB IDs:

CCB1 IDs: P= CCB409676

CCB2 IDs: P= CCB409678

CCB3 IDs: P= CCB409688

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			3.86	B	3.15	B	2.37	B			P

ICB IDs:

CCB1 IDs: P= CCB409690

CCB2 IDs: P= CCB409704

CCB3 IDs: P= CCB409716

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic	1.8	U	1.8	U	1.8	U	1.8	U			P

ICB IDs: P= ICB410252

CCB1 IDs: P= CCB410258

CCB2 IDs: P= CCB410270

CCB3 IDs: P= CCB410282

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.8	U	1.8	U	1.8	U			P

ICB IDs:

CCB1 IDs: P= CCB410575

CCB2 IDs: P= CCB410587

CCB3 IDs: P= CCB410600

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3

BLANKS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (UG/L)	C	Continuing Calibration Blank (UG/L)	C		C		C	Prepa-ration Blank	C	M
Arsenic			1.8	U							P

ICB IDs:

CCB1 IDs: P= CCB410603

CCB2 IDs:

CCB3 IDs:

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100		97.335	97.3		98.075	98.1

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100					101.699	101.7

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100		99.855	99.9		92.401	92.4

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100					100.39	100.4

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100					92.497	92.5

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID#: ICAP2 ICSA Source: 13082

ICSAB Source: 12562

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Arsenic	0	100		101.759	101.8			

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

250407803A

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	80 - 120	448.00		-6.82	U	500	89.6		P

Comments:

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

NRS2009SS16-B1A

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: Soil Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	80 - 120	326.00			U	500	65.2		P

Comments:

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6

DUPLICATES

EPA Sample No.

215836LCSD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	20	495		492		0.6		P

Comments:

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6

DUPLICATES

EPA Sample No.

216146LCSD

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Level:(low/med) LOW

% Solids for Sample: 100 % Solids for Duplicate: 100

Concentration Units (mg/L or mg/kg): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	20	47.5		46.8		1.5		P

Comments:

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7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI 215835LCS

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Solid LCS Source:

Aqueous LCS Source: 11519, 10140

	Aqueous (UG/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Arsenic	500	495	99.0				-	

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7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI 215836LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Solid LCS Source:

Aqueous LCS Source: 11519, 10140

	Aqueous (UG/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Arsenic	500	492	98.4				-	

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7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI 216145LCS

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Solid LCS Source: 11519, 10140

Aqueous LCS Source:

	Aqueous			Solid (MG/KG)					
Analyte	True	Found	%R	True	Found	C	Limits		%R
Arsenic				50	47.5		80	- 120	95.0

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7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI 216146LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Solid LCS Source: 11519, 10140

Aqueous LCS Source:

	Aqueous			Solid (MG/KG)					
Analyte	True	Found	%R	True	Found	C	Limits		%R
Arsenic				50	46.8		80	- 120	93.6

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9

SERIAL DILUTIONS

EPA Sample No.

250407803L

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Arsenic	-6.82	U	9.00	U			P

Comments:

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9

SERIAL DILUTIONS

EPA Sample No.

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

NRS2009SS16-B1L

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: Soil Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Arsenic		U		U			P

Comments:

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10

METHOD DETECTION LIMITS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID Number : ICAP2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Raw MDL (UG/L)	CRDL (MG/KG)	MDL (MG/KG)	Verification Date	M
Arsenic	188.981	1.7	0.5	0.17	2/16/06	P

Comments:

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10

METHOD DETECTION LIMITS

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID Number : ICAP2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Raw MDL (UG/L)	CRDL (UG/L)	MDL (UG/L)	Verification Date	M
Arsenic	188.981	1.8	5	1.8	2/14/06	P

Comments:

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12

ICP LINEAR RANGES (SEMI-ANNUALLY)

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

ICP ID NUMBER ICAP2 DATE : 5/19/06

Analyte	Integ. Time (sec.)	Concentration UG/L	M
Arsenic	0.1	5000	P

Comments:

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13

PREPARATION LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Method : 6010

EPA Sample No:	Preparation Date	Weight (gram)	Volume (mL)
215834BLK	15 Jun 06		50
215835LCS	15 Jun 06		50
215836LCSD	15 Jun 06		50
NRS2009EB02-0606	15 Jun 06		50
NRS2009FB02-0606	15 Jun 06		50

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13

PREPARATION LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Method : 6010

EPA Sample No:	Preparation Date	Weight (gram)	Volume (mL)
216144BLK	20 Jun 06	0.5	
216145LCS	20 Jun 06	0.5	
216146LCSD	20 Jun 06	0.5	
NRS2009FD04-B1	20 Jun 06	0.759	
NRS2009FD05-B1	20 Jun 06	0.795	
NRS2009SS16-B1	20 Jun 06	0.753	
NRS2009SS17-B1	20 Jun 06	0.873	
NRS2009SS18-B1	20 Jun 06	0.817	
NRS2009SS19-B1	20 Jun 06	0.871	
NRS2009SS20-B1	20 Jun 06	0.86	
NRS2009SS21-B1	20 Jun 06	0.772	
NRS2009SS22-B1	20 Jun 06	0.877	
NRS2009SS23-B1	20 Jun 06	0.792	
NRS2009SS24-B1	20 Jun 06	0.877	

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CAL01	1	9:58				X																									
CAL02	1	10:03																													
CAL03	1	10:08				X																									
CAL04	1	10:13				X																									
CAL05	1	10:18				X																									
CAL06	1	10:23				X																									
ICV408266	1	10:29				X																									
ICB408267	1	10:33				X																									
ZZZZZZ	1	10:38																													
ZZZZZZ	1	10:44																													
ICSA	1	10:53				X																									
ICSAB	1	10:58				X																									
CCV408272	1	11:02				X																									
CCB408273	1	11:19				X																									
ZZZZZZ	200	11:24																													
ZZZZZZ	5	11:29																													
ZZZZZZ	10	11:34																													
ZZZZZZ	20	11:39																													
ZZZZZZ	1	11:44																													
ZZZZZZ	1	11:49																													
ZZZZZZ	1	11:53																													
ZZZZZZ	1	11:58																													
ZZZZZZ	5	12:03																													
ZZZZZZ	1	12:08																													
CCV408284	1	12:13				X																									
CCB408285	1	12:18				X																									
ZZZZZZ	1	12:21																													
ZZZZZZ	1	12:26																													
ZZZZZZ	5	12:31																													
ZZZZZZ	25	12:36																													
ZZZZZZ	5	12:41																													
ZZZZZZ	5	12:46																													
ZZZZZZ	5	12:50																													
ZZZZZZ	5	12:56																													
ZZZZZZ	500	13:00																													
ZZZZZZ	1	13:05																													

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCV408336	1	13:10				X																									
CCB408337	1	13:15				X																									
ZZZZZZ	1	13:20																													
ZZZZZZ	1	13:25																													
ZZZZZZ	1	13:30																													
ZZZZZZ	5	13:35																													
ZZZZZZ	1	13:40																													
ZZZZZZ	1	13:45																													
ZZZZZZ	1	13:50																													
ZZZZZZ	1	13:53																													
ZZZZZZ	10	13:59																													
ZZZZZZ	5	14:04																													
CCV408363	1	14:08				X																									
CCB408364	1	14:13				X																									
ZZZZZZ	5	14:18																													
ZZZZZZ	5	14:23																													
ZZZZZZ	5	14:28																													
ZZZZZZ	5	14:33																													
ZZZZZZ	5	14:38																													
ZZZZZZ	5	14:42																													
ZZZZZZ	5	14:47																													
ZZZZZZ	5	14:52																													
ZZZZZZ	5	14:57																													
ZZZZZZ	5	15:02																													
ICSA	1	15:07				X																									
ICSAB	1	15:12				X																									
CCV408419	1	15:17				X																									
CCB408420	1	15:22				X																									
ZZZZZZ	1	15:31																													
ZZZZZZ	1	15:36																													
ZZZZZZ	1	15:40																													
ZZZZZZ	1	15:45																													
ZZZZZZ	5	15:50																													
ZZZZZZ	1	15:55																													
ZZZZZZ	1	15:59																													
CCV408486	1	16:05				X																									

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCB408487	1	16:10				X																									
215834BLK	1	16:20				X																									
215835LCS	1	16:25				X																									
215836LCSD	1	16:29				X																									
ICSA	1	16:35				X																									
ICSAB	1	16:40				X																									
CCV408493	1	16:44				X																									
CCB408494	1	16:49				X																									
ZZZZZZ	1	16:54																													
250407803L	5	16:59				X																									
ZZZZZZ	1	17:04																													
ZZZZZZ	1	17:09																													
250407803A	1	17:14				X																									
ZZZZZZ	1	17:18																													
NRS2009EB02-0606	1	17:32				X																									
NRS2009FB02-0606	1	17:37				X																									
ZZZZZZ	1	17:42																													
ZZZZZZ	1	17:47																													
CCV408505	1	17:52				X																									
CCB408506	1	17:57				X																									
CAL01	1	11:14				X																									
CAL02	1	11:19																													
CAL03	1	11:24				X																									
CAL04	1	11:29				X																									
CAL05	1	11:34				X																									
CAL06	1	11:39				X																									
ICV409266	1	11:47				X																									
ICB409267	1	11:52				X																									
ZZZZZZ	1	11:57																													
ZZZZZZ	1	12:04																													
ICSA	1	12:12				X																									
ICSAB	1	12:16				X																									
CCV409272	1	12:21				X																									
CCB409273	1	12:26				X																									
ZZZZZZ	1	12:32																													
ZZZZZZ	1	12:37																													

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	1	12:42																													
ZZZZZZ	1	12:48																													
ZZZZZZ	5	12:53																													
ZZZZZZ	1	12:58																													
ZZZZZZ	1	13:03																													
ZZZZZZ	1	13:07																													
ZZZZZZ	1	13:12																													
ZZZZZZ	5	13:17																													
CCV409284	1	13:22				X																									
CCB409285	1	13:27				X																									
ZZZZZZ	1	13:32																													
ZZZZZZ	1	13:36																													
ZZZZZZ	1	13:41																													
ZZZZZZ	5	13:46																													
ZZZZZZ	25	13:51																													
ZZZZZZ	5	13:56																													
ZZZZZZ	5	14:00																													
ZZZZZZ	5	14:05																													
ZZZZZZ	1	14:10																													
ZZZZZZ	5	14:15																													
CCV409663	1	14:20				X																									
CCB409664	1	14:25				X																									
ZZZZZZ	1	14:30																													
ZZZZZZ	5	14:34																													
ZZZZZZ	1	14:39																													
ZZZZZZ	5	14:45																													
ZZZZZZ	5	14:50																													
ZZZZZZ	25	14:55																													
ZZZZZZ	1	15:00																													
ZZZZZZ	5	15:04																													
ICSA	1	15:09				X																									
ICSAB	1	15:14				X																									
CCV409675	1	15:19				X																									
CCB409676	1	15:24				X																									
CCV409677	1	15:59				X																									
CCB409678	1	16:04				X																									

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	1	16:10																													
ZZZZZZ	1	16:15																													
ZZZZZZ	1	16:20																													
ZZZZZZ	5	16:25																													
ZZZZZZ	5	16:30																													
ZZZZZZ	5	16:36																													
ICSA	1	16:41				X																									
ICSAB	1	16:45				X																									
CCV409687	1	16:50				X																									
CCB409688	1	16:54				X																									
CCV409689	1	17:07				X																									
CCB409690	1	17:12				X																									
216144BLK	1	17:17				X																									
216145LCS	1	17:22				X																									
216146LCSD	1	17:27				X																									
ZZZZZZ	1	17:31																													
ZZZZZZ	5	17:36																													
ZZZZZZ	1	17:42																													
ZZZZZZ	1	17:47																													
ZZZZZZ	1	17:52																													
ZZZZZZ	1	17:57																													
ZZZZZZ	1	18:02																													
ICSA	1	18:07				X																									
ICSAB	1	18:12				X																									
CCV409703	1	18:16				X																									
CCB409704	1	18:21				X																									
ZZZZZZ	1	18:26																													
ZZZZZZ	1	18:31																													
ZZZZZZ	1	18:36																													
ZZZZZZ	1	18:41																													
ZZZZZZ	1	18:46																													
ZZZZZZ	1	18:51																													
ZZZZZZ	1	18:57																													
NRS2009SS24-B1	1	19:02				X																									
ZZZZZZ	1	19:07																													
ZZZZZZ	1	19:12																													

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCV409715	1	19:17				X																									
CCB409716	1	19:21				X																									
CAL01	1	9:51				X																									
CAL02	1	9:56																													
CAL03	1	10:01				X																									
CAL04	1	10:06				X																									
CAL05	1	10:11				X																									
CAL06	1	10:16				X																									
ICV410251	1	10:25				X																									
ICB410252	1	10:30				X																									
ZZZZZZ	1	10:35																													
ZZZZZZ	1	10:40																													
ICSA	1	10:46				X																									
ICSAB	1	10:50				X																									
CCV410257	1	10:55				X																									
CCB410258	1	11:00				X																									
ZZZZZZ	10	11:05																													
NRS2009SS16-B1	20	11:12				X																									
NRS2009SS16-B1L	100	11:17				X																									
ZZZZZZ	20	11:22																													
ZZZZZZ	20	11:27																													
NRS2009SS16-B1A	20	11:32				X																									
ZZZZZZ	10	11:37																													
ZZZZZZ	10	11:42																													
ZZZZZZ	10	11:47																													
ZZZZZZ	10	11:51																													
CCV410269	1	11:56				X																									
CCB410270	1	12:01				X																									
NRS2009SS20-B1	10	12:06				X																									
ZZZZZZ	10	12:11																													
ZZZZZZ	10	12:15																													
NRS2009SS23-B1	10	12:20				X																									
ZZZZZZ	20	12:25																													
ZZZZZZ	20	12:29																													
ZZZZZZ	20	12:34																													
ZZZZZZ	20	12:39																													

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14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	20	12:44																													
ZZZZZZ	20	12:49																													
CCV410281	1	12:54				X																									
CCB410282	1	12:59				X																									
ZZZZZZ	10	13:04																													
ZZZZZZ	10	13:09																													
ZZZZZZ	20	13:14																													
ZZZZZZ	20	13:19																													
ZZZZZZ	25	13:24																													
ZZZZZZ	20	13:29																													
ZZZZZZ	25	13:34																													
ZZZZZZ	25	13:39																													
ZZZZZZ	25	13:44																													
NRS2009SS21-B1	25	13:50				X																									
CCV410574	1	13:55				X																									
CCB410575	1	14:00				X																									
NRS2009FD05-B1	25	14:05				X																									
NRS2009SS17-B1	50	14:10				X																									
NRS2009FD04-B1	50	14:15				X																									
NRS2009SS18-B1	50	14:20				X																									
NRS2009SS19-B1	50	14:25				X																									
ZZZZZZ	50	14:30																													
ZZZZZZ	10	14:35																													
ZZZZZZ	50	14:40																													
ZZZZZZ	10	14:45																													
ZZZZZZ	10	14:50																													
CCV410586	1	14:55				X																									
CCB410587	1	14:59				X																									
ZZZZZZ	10	15:04																													
ZZZZZZ	10	15:09																													
ZZZZZZ	50	15:14																													
ZZZZZZ	10	15:19																													
ZZZZZZ	10	15:24																													
ZZZZZZ	10	15:29																													
ZZZZZZ	10	15:34																													
ZZZZZZ	10	15:39																													

270606 1156

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Instrument ID Number : ICAP2 Method : P

Start Date : 6/20/06 End Date : 6/26/06

EPA Sample No.	D/F	Time	%R	Analytes																									
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
ZZZZZZ	5	15:44																													
ZZZZZZ	10	15:48																													
CCV410598	1	15:53				X																									
CCV410599	1	15:56				X																									
CCB410600	1	16:01				X																									
NRS2009SS22-B1	5	16:08				X																									
CCV410602	1	16:12				X																									
CCB410603	1	16:17				X																									

270606 1156

Chain of Custody Documentation

270606 1156

DRMO Chain of Custody

2504068-ELM

Project Site	NAPR DRMO
Project Manager	Russ Bowen (CH2M HILL)
Contact Tel No.	813-874-0777
Contact Address	4350 W. Cypress Street, Suite 600, Tampa, FL 33607
Lab Name	PEL Labs
Lab Contact	
Lab Address	4420 Pendola Point Road Tampa,FL 33619

Project No. 315616.AC.FI

Lab Batch/SDG ID

Lab Tel No./Fax No.

813-237-2805/813-248-1537

Item	Sample ID	Station ID	Matrix	Date & Time Collected	Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)	Comments
1	NRS2009SS12-B1	NRS2009SS12	Soil	6/9/2006 0822	3	3				Use Extra For MS/MSD
2	NRS2009SS13-B1	NRS2009SS13	Soil	6/9/2006 0835	1	1				
3	NRS2009SS14-B1	NRS2009SS14	Soil	6/9/2006 0855	1	1				
4	NRS2009SS15-B1	NRS2009SS15	Soil	6/9/2006 0905	3	3				Use Extra For MS/MSD
5	NRS2009SS16-B1	NRS2009SS16	Soil	6/9/2006 0920	1	1				~~01~~ ~~MISNUMBERED~~ ELM 01
6	NRS2009SS17-B1	NRS2009SS17	Soil	6/9/2006 0925	1	1				~~01~~ 02
7	NRS2009FD04-B1	NRS2009SS17	Soil	6/9/2006 0925	1	1				03
8	NRS2009SS18-B1	NRS2009SS18	Soil	6/9/2006 0930	1	1				04
9	NRS2009SS19-B1	NRS2009SS19	Soil	6/9/2006 0950	1	1				05
10	NRS2009SS20-B1	NRS2009SS20	Soil	6/9/2006 0955	1	1				06
11	NRS2009SS21-B1	NRS2009SS21	Soil	6/9/2006 1000	1	1				07
12	NRS2009FD05-B1	NRS2009SS21	Soil	6/9/2006 1000	1	1				08

Sampled By: Kenji Butler | Date/Time: 6/9/2006 1200 | Custody Seal: Y / N | Relinquished By: [signature] | Date/Time: 6/9/06 1300

Shipped Via: UPS FedEx Hand Other (Please specify):

Samples Temperature and Condition Upon Receipt (for lab's use):

Received By: Ed Moore Pel	Date/Time: 06/10/06 930	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks:
3.6C

Prepared by Kenji Butler 6/9/2006

2504068

102

DRMO Chain of Custody

2504068- ELM

Project Site	NAPR DRMO
Project Manager	Russ Bowen (CH2M HILL)
Contact Tel No.	813-874-0777
Contact Address	4350 W. Cypress Street, Suite 600, Tampa, FL 33607
Lab Name	PEL Labs
Lab Contact	
Lab Address	4420 Pendola Point Road Tampa,FL 33619

Project No. 315616.AC.FI

Lab Batch/SDG ID

Lab Tel No./Fax No.

813-237-2805/813-248-1537

Item	Sample ID	Station ID	Matrix	Date & Time Collected	Number of Containers	Arsenic (6010 Soil)	Arsenic (6010 Water)	TPH-DRO (8015 Soil)	TPH-DRO (8015 Water)	Comments
1	NRS2009SS22-B1	NRS2009SS22	Soil	6/9/2006 1005	1	1				09
2	NRS2009SS23-B1	NRS2009SS23	Soil	6/9/2006 1010	1	1				10
3	NRS2009SS~~23~~24-B1	NRS2009SS24	Soil	6/9/2006 1016	1	1				*labeled wrong* 11
4	24 am									
5	NRS2009EB01-0606	Field QC	Water	6/8/2006 1815	1				1	12
6	NRS2009EB02-0606	Field QC	Water	6/8/2006 1816	1		1			13
7	NRS2009FB01-0606	Field QC	Water	6/8/2006 1820	1				1	14
8	NRS2009FB02-0606	Field QC	Water	6/8/2006 1821	1		1			15
9										
10										
11										
12										

Sampled By: Kenji Butler | Date/Time: 6/9/2006 1200 | Custody Seal: Y / N | Relinquished By: [signature] | Date/Time: 6/9/06 1300

Shipped Via: UPS (FedEx) Hand Other (Please specify): pH<2 (6010, DRO)

Samples Temperature and Condition Upon Receipt (for lab's use):

Received By: ED Moore Pel	Date/Time: 06/10/06 930	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks: 3.6C

Prepared by Kenji Butler 6/9/2006

2504068

FedEx Express International Air Waybill

Origin Copy

PACKAGE LABEL

COMMERCIAL INVOICE LABEL

DELIVERY RECORD LABEL

DELIVERY REATTEMPT LABEL

8525796057 60 8525796057 60 8525796057 60

1 From

Date 6/9/06 Sender's FedEx Account Number ~~0336-3482-0~~

Sender's Name Kenji Butler Phone 850-443-0010

Company CH2M Hill

Address Bldg 192, Forrestal Dr

Address

City Ceiba State/Province PR

Country USA ZIP/Postal Code 00735

2 To

Recipient's Name Sample Custody Phone 813-237-2805

Company PEL Labs

Address 4420 Pendola Point Road Dept./Floor

Address

City Tampa State/Province FL

Country USA ZIP/Postal Code 33619

Recipient's Tax ID number for Customs purposes
e.g., GST/RFC/VAT/IN/EIN, or as locally required

3 Shipment Information

☐ For EU Only: Tick here if goods are not in free circulation and provide C.I.

Total Packages (Shipper's Load and Count/SLAC): 2

Total Weight: 77.55 ☒ lbs ☐ kg DIM L / W / H ☐ in. ☐ cm

Commodity Description REQUIRED	Harmonized Code	Country of Manufacture	Value for Customs REQUIRED
Sample Kits			$100.00
Soil Samples			$1,200.00
Water Samples			$500.00

For U.S. Export Only: Check One
☐ No SED required per Exemption
☐ No SED required, value $2500 or less per Schedule B Commodity number
☐ SED attached (provide export license no. and exp. date or license exception symbol, w/ECCN if applicable)

Total Declared Value for Carriage

Total Value for Customs (Specify Currency): $1,600.00

4 Express Package Service

Packages up to 150 lbs. / 68 kg
For packages over 150 lbs. (68 kg), use the FedEx Expanded Service Intl. Air Waybill.

1 ☒ FedEx Intl. Priority
6 ☐ FedEx Intl. First — Available to select locations. Higher rates apply.
☐ ____
3 ☐ FedEx Intl. Economy — FedEx Envelope and FedEx Pak rate not available

Not all services and options are available to all destinations. Dangerous goods cannot be shipped using this Air Waybill.

5 Packaging

*These unique brown boxes with special pricing are provided by FedEx for FedEx Intl. Priority only.

6 ☐ FedEx Envelope 2 ☐ FedEx Pak 3 ☐ FedEx Box 4 ☐ FedEx Tube
1 ☒ Other PW ☐ FedEx 10kg Box* PX ☐ FedEx 25kg Box*

6 Special Handling

1 ☐ HOLD at FedEx Location 3 ☒ SATURDAY Delivery — Available to select locations for FedEx Intl. Priority only

7a Payment *Bill transportation charges to:*

Enter FedEx Acct. No. or Credit Card No. below.

1 ☒ Sender Acct. No. in Section 1 will be billed. 2 ☒ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash Check/Cheque

FedEx Acct. No. 0336 3482-0

Credit Card No.

Credit Card Exp. Date

Total Transportation

Specify Currency

7b Payment *Bill duties and taxes to:*

ALL shipments can be subject to Customs charges, which FedEx does not estimate prior to clearance.

Enter FedEx Acct. No. below.

1 ☒ Sender Acct. No. in Section 1 will be billed. 2 ☐ Recipient 3 ☐ Third Party 5 ☐ Cash Check/Cheque

FedEx Acct. No.

8 Your Internal Billing Reference

First 24 characters will appear on invoice.

315616.AC.FI

9 Required Signature

Use of this Air Waybill constitutes your agreement to the Conditions of Contract on the back of this Air Waybill, and you represent that this shipment does not require a U.S. State Department License or contain dangerous goods. Certain international treaties, including the Warsaw Convention, may apply to this shipment and limit our liability for damage, loss, or delay, as described in the Conditions of Contract. **WARNING:** These commodities, technology, or software were exported from the United States in accordance with Export Administration Regulations. Diversion contrary to U.S. law prohibited.

Sender's Signature:

This is not authorization to deliver this shipment without a recipient signature.

Received above shipment in good order and condition. We agree to pay all charges, including Customs duties and taxes as applicable, and we agree to the Conditions of Contract as stated on the reverse side of the Recipient's Copy.

Recipient's Signature:

FedEx Tracking Number 8525 7960 5760 0402

500

PART 158410
Rev. Date 10/03
©1994–2003 FedEx
PRINTED IN U.S.A.

Form ID No.

Origin Station ID	Destination Station ID	URSA Routing	Handling Units
WBRP	XO MCFA	TPA	Total Volume (cm)

Received At: 1 ☐ Reg. Stop 2 ☐ On-Call Stop 3 ☐ Drop Box 4 ☐ World Service Center 5 ☒ Station

Forms Attached: ☐ CI ☐ SED ☐ CO

Base Charges ____ Declared Val. Chrg. ____ Other ____ ODA/OPA ____ Credit Card Auth. ____
FedEx Emp. # 56094 Audit Emp. # ____ Date 6-9 Time ____ Del. Courier Emp. # ____ Date ____ Time ____

Non-Negotiable International Air Waybill • ©1994–2003 Federal Express Corporation

SRC 2/05

2504068

PEL Laboratories, Inc.

pH LOG SHEET

Work Order # 2504068

By Ed

Client / Project Name NAPR

Date 06/12/06

PEL Sample Number	H_2SO_4 (pH<2)		HNO_3 (pH<2)		NaOH (pH>12)		ZnAC/NaOH (pH>9)		HCl (pH<2)		Other _____ pH _____	
	No. of Containers	pH	No. of Containers	pH	No. of Containers	pH	No. of Containers	pH	No. of Containers	pH	No. of Containers	pH
12									1	<2		
13			1	<2								
14									1	<2		
15			1	<2								

W:\Login\pH LOG SHEET REV 3.doc

2504068

SAMPLE RECEIPT CONFIRMATION SHEET

Client Information

SDG:	2504068	**Req:**	70910
Client:	CH2M Hill	**Project:**	Buildings 2009 for 2006
Level:	3	**Date Rec'd:**	6/10/06 9:30:00 AM
Rec'd via:	Fed-Ex	**Due Date:**	07/03/06

Sample Verification

Samples/Cooler Secure?	Yes	**All Samples on COC accounted For?**	Yes
Temperature of Samples(Celsius)	3.6	**All Samples Rec'd Intact?**	Yes
pH Verified?	Yes	**Sample Vol. Stuff. For Analysis?**	Yes
pH WNL?	Yes	**Samples Rec'd W/I Hold Time?**	Yes
Soil Origin (Domestic/Foreign):	Domestic	**Are All Samples to be Analyzed?**	Yes
Site Location/Project on COC?	Yes	**Correct Sample Containers?**	Yes
Client Project # on COC?	Yes	**COC Comments written on COC?**	Yes
Project Mgr. Indicated on COC?	Yes	**Samplers Initials on COC?**	Yes
COC relinquished/Dated by Client?	Yes	**Sample Date/Time Indicated?**	Yes
COC Received/Dated by PEL?	Yes	**TAT Requested:**	STD
Specific Subcontract Indicated?	No	**Client Requests Verbal Results?**	No
Samples Received By	Fed-Ex	**Client Requests Faxed Results?**	No
PEL to Conduct ALL Analyses?	Yes		

Subcontract Analysis

Parameter	Due Date	Via	Lab Name	Comments

PEER REVIEW _____ **PM REVIEW:** _____

Client: CH2M Hill

WONo: 2504068 **Profile Name:** U.S. NAPR **Profile #:** 70910

MATRIX S

Sample #	Parameter		Relinquished	Received	Date	Time
01 - 11	Dry Weight	Dry Weight			6/13/06	14:40
01 - 11	Dry Weight	Dry Weight			6/13/06	15:40
01 - 11	6010	Metals		MB	6/20/06	11:00
01 - 11	6010	Metals	N/A			

Additional:

MATRIX W

Sample #	Parameter		Relinquished	Received	Date	Time
13 & 15	6010	Metals			6/15/6	1800
13 & 15	6010	Metals	N/A			
12 & 14	8015	DRO			6/15/06	9:00
12 & 14	8015	DRO	Continued			

Additional:

Comments:

Addendum

270606 1156

Letter of Acceptance

Customer Name: CH2M Hill

Date and Time Received: 6/10/2006 9:30:00 AM

Date to be Reported: 7/1/2006

Laboratory Submission Number/SDG: 2504068

Get Detailed Analyte List here: www.pelab.com/webdms/Default.asp?LoaSDG=2504068

Project: NAPR DRMO 315616.AC.FI

Samples: The submission consisted of 15 samples with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: 6010, 8015.

Sample Custody/COC discrepancies:

On page 5, Item # 3 on COC has ID NRS2009SS23-B1. Container is labeled NRS2009SS24-B1. Client was notified and clarified sample IDs.

Notes:

None.

Distribution of Report to:

CH2M Hill
Attn: Kevin Sanders
Phone: W 352-335-5877

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. PEL letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials

Log-in Report

Level: 3

Total of: 15 analyses on 15 samples (including QC) *12-Jun-06*

Report/SDG #: 2504068

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS16-B1	250406801	NRS2009SS16	SO	6/9/2006 9:20:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS17-B1	250406802	NRS2009SS17	SO	6/9/2006 9:25:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FD04-B1	250406803	NRS2009SS17	SO	6/9/2006 9:25:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS18-B1	250406804	NRS2009SS18	SO	6/9/2006 9:30:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS19-B1	250406805	NRS2009SS19	SO	6/9/2006 9:50:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS20-B1	250406806	NRS2009SS20	SO	6/9/2006 9:55:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

Report/SDG #: 2504068

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS21-B1	250406807	NRS2009SS21	SO	6/9/2006 10:00:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FD05-B1	250406808	NRS2009SS21	SO	6/9/2006 10:00:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS22-B1	250406809	NRS2009SS22	SO	6/9/2006 10:05:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS23-B1	250406810	NRS2009SS23	SO	6/9/2006 10:10:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009SS24-B1	250406811	NRS2009SS24	SO	6/9/2006 10:16:00 AM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009EB01-0606	250406812	FIELD QC	WQ	6/8/2006 6:15:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

Report/SDG #: 2504068

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009EB02-0606	250406813	FIELD QC	WQ	6/8/2006 6:16:00 PM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FB01-0606	250406814	FIELD QC	WQ	6/8/2006 6:20:00 PM	6/10/2006 9:30:00 AM

Method		
8015	DRO	8015

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
NRS2009FB02-0606	250406815	FIELD QC	WQ	6/8/2006 6:21:00 PM	6/10/2006 9:30:00 AM

Method		
6010	Metals	6010

John Heyman

From: Kenji.Butler@CH2M.com
Sent: Monday, June 12, 2006 11:06 AM
To: John Heyman; kevin.sanders@ch2m.com; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

John,

The correct information for page 2, item #11 should be NRS2009SB22-S1 date: 6/7/2006 Container is correct.
The correct information for page 3, item #3 should be NRS2009SS03-B1 The sample label is incorrect.
The correct information for page 5, item #3 should be NRS2009SS24-B1 Container is correct

If you have any more questions, please let me know and I will answer them as soon as possible.

Kenji Butler

From: John Heyman [mailto:jheyman@PELAB.com]
Sent: Monday, June 12, 2006 10:54 AM
To: Sanders, Kevin/GNV; Butler, Kenji/TPA; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

Kevin:

We have a few sample ID issues. The hand written notes on this COC copy are mine.

On page 2, Item # 11 on COC has ID NRS2009SB22-S3 date: 6/8/2006. Container is labeled NRS2009SB22-S1 date: 6/7/2006.

On page 3, Item # 3 on COC has ID NRS2009SS03-B1. Container is labeled NRS2009SS03-S1.

On page 5, Item # 3 on COC has ID NRS2009SS23-B1. Container is labeled NRS2009SS24-B1.

Please advise.

We also received a cooler of empty containers. I just want to make sure that you did not sample 8260 Encores, or 8015 GRO.

Thanks!
John

-----Original Message-----
From: Kevin.Sanders@CH2M.com [mailto:Kevin.Sanders@CH2M.com]
Sent: Monday, June 12, 2006 9:02 AM
To: John Heyman; kenji.butler@ch2m.com; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

appreciated John.

From: John Heyman [mailto:jheyman@PELAB.com]
Sent: Monday, June 12, 2006 9:00 AM
To: Sanders, Kevin/GNV; Butler, Kenji/TPA; Mark Gudnason
Cc: LogIn
Subject: RE: DRMO samples expected Saturday

Coolers came in fine on Saturday. Everything looks good at first glance. I'll get a LOA and copy of the COC out to you this morning.

Thanks!
John

-----Original Message-----
From: Kevin.Sanders@CH2M.com [mailto:Kevin.Sanders@CH2M.com]
Sent: Monday, June 12, 2006 8:57 AM
To: kenji.butler@ch2m.com; Mark Gudnason
Cc: John Heyman; LogIn
Subject: RE: DRMO samples expected Saturday

Do we have lift-off ? Delivery, receipt, COC, all intact and understandable ?

Kevin A. Sanders
Senior Environmental Chemist
CH2M-Hill/GNV
3011 SW Williston Road
Gainesville, FL 32608-3928
(352)335-5877 ext 52436
(352)335-2959 FAX
ksanders@ch2m.com

Working Hours: 0830-1730

From: Butler, Kenji/TPA
Sent: Saturday, June 10, 2006 7:23 AM
To: Mark Gudnason
Cc: Sanders, Kevin/GNV; John Heyman; LogIn
Subject: RE: DRMO samples expected Saturday

The tracking number for the two coolers is 8525 7960 5760. If you have any questions, please feel free to contact me at 850-443-0010. Thank you very much.

Kenji Butler

From: Mark Gudnason [mailto:mgudnason@PELAB.com]
Sent: Thursday, June 08, 2006 4:51 PM
To: Butler, Kenji/TPA
Cc: Sanders, Kevin/GNV; John Heyman; LogIn
Subject: DRMO samples expected Saturday
Importance: High

Kenji, to follow up on our conversation please have FedEx mark the coolers "Saturday Delivery" place the "Saturday Delivery" stickers as well.

Please "reply to all" when you email the FedEx tracking numbers.

Have a good weekend.

Thanks.

Mark Gudnason
Project Manager
PEL Laboratories, Inc.
4420 Pendola Point Road
Tampa, FL 33619
Phone: 813-247-2805 ext. 242
FAX: 813-248-1537
e-mail: mgudnason@pelab.com

Visit our website at www.pelab.com

John Heyman

From: John Heyman
Sent: Monday, June 26, 2006 4:41 PM
To: 'Kevin.Sanders@CH2M.com'
Subject: FW: 2504068 (US NAPR) 6010

Good afternoon.

DRMO project

-----Original Message-----
From: Linda Lee Gates
Sent: Monday, June 26, 2006 4:40 PM
To: Project Managers
Subject: 2504068 (US NAPR) 6010

Samples NRS2009FD04-B1, NRS2009SS17-B1, NRS2009SS18-B1, NRS2009SS19-B1 required a 1:50 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009FD05-B1, NRS2009SS21-B1 required a 1:25 dilution due to matrix interference with the following analyte(s): Arsenic.

Sample NRS2009SS16-B1 required a 1:20 dilution due to matrix interference with the following analyte(s): Arsenic.

Samples NRS2009SS20-B1, NRS2009SS23-B1 required a 1:10 dilution due to matrix interference with the following analyte(s): Arsenic.

Sample NRS2009SS22-B1 required a 1:5 dilution due to matrix interference with the following analyte (s): Arsenic.

Please inform client.

APPENDIX B

Data Validation Report

VALIDATA
Chemical Services, Inc.
4070 Balleycastle Lane, Duluth, GA 30097
(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

08/09/06

CH2M HILL
3011 SW Willston Road
Gainesville, Fla 32608
Attn: Kevin Sanders

Dear Mr. Sanders:

Please find enclosed the data validation reports and qualified Form I's for CT025, Roosevelt Roads Project, SDG#s 2504068, 2504066 and 2504064. The electronic data files have been sent to you by e-mail.

Please call Kevin Harmon or myself at (770) 232-0130 if you have any questions. We are pleased to be of service to CH2M HILL.

Sincerely,

Monalisa B. Beasley
Quality Control Reviewer

RECEIVED
AUG 11 2006
By

VALIDATA
Chemical Services, Inc.
4070 Balleycastle Lane, Duluth, GA 30097
(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY REPORT

COMPANY:	CH2M HILL
SITE NAME:	CTO-025
CONTRACTED LAB:	PEL Laboratories, Inc.
QA/QC LEVEL:	EPA Level IV
EPA SOW/METHOD:	EPA 1990 SOW
VALIDATION GUIDELINES:	*USEPA Region II, SOPs: HW-24 for the Validation of Organic Data Acquired using SW-846 Method 8260B, 1996; HW-22 for the Validation of Organic Data Acquired using SW-846 Method 8270B,1995; HW-2 for the Validation of Metals Data Acquired using SW-846 Method 6010B, 1992; Memorandum "Clarification of Scope of Work for Data Validation Services, Defense Reutilization and Marketing Office (DRMO), U.S. Naval Activity, Ceiba, Puerto Rico, 4/5/2005*
SAMPLE MATRIX:	Soil
TYPES OF ANALYSES:	Diesel Range Organics (DRO-TPH C10-28)
SDG NUMBER:	2504064

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	DRO
NRS2009SB04-S2	250406401	Soil	X
NRS2009SB04-S2RE	250406401RE	Soil	X
NRS2009SB04-S3	250406402	Soil	X
NRS2009SB04-S3RE	250406402RE	Soil	X
NRS2009SB08-S2	250406403	Soil	X
NRS2009SB08-S2RE	250406403RE	Soil	X
NRS2009SB08-S3	250406404	Soil	X
NRS2009SB08-S3RE	250406404RE	Soil	X
NRS2009SB10-S2	250406407	Soil	X
NRS2009SB10-S2RE	250406407RE	Soil	X
NRS2009SB10-S3	250406408	Soil	X
NRS2009SB10-S3RE	250406408RE	Soil	X
NRS2009SB15-S1	250406411	Soil	X
NRS2009SB15-S1RE	250406411RE	Soil	X
NRS2009SB15-S3	250406412	Soil	X

Client Sample #	Lab Sample #	Matrix	DRO
NRS2009SB15-S3RE	250406412RE	Soil	X
NRS2009SB16-S1	250406413	Soil	X
NRS2009SB16-S1RE	250406413RE	Soil	X
NRS2009SB16-S3	250406414	Soil	X
NRS2009SB16-S3RE	250406414RE	Soil	X
NRS2009SB17-S1	250406415	Soil	X
NRS2009SB17-S1RE	250406515RE	Soil	X
NRS2009SB17-S3	250406416	Soil	X
NRS2009SB17-S3RE	250406416RE	Soil	X
NRS2009SB18-S1	250406417	Soil	X
NRS2009SB18-S1RE	250406417RE	Soil	X
NRS2009SB18-S3	250406418	Soil	X
NRS2009SB18-S3RE	250406418RE	Soil	X
NRS2009FD01-S3	250406419	Soil	X
NRS2009FD01-S3RE	250406419RE	Soil	X
NRS2009SB19-S1	250406420	Soil	X
NRS2009SB19-S1RE	250406420RE	Soil	X
NRS2009SB08-S3MS	250406404MS	Soil	X
NRS2009SB08-S3MSD	250406404MSD	Soil	X
NRS2009SB08-S3REMS	250406404REMS	Soil	X
NRS2009SB08-S3REMSD	250406404REMSD	Soil	X
NRS2009SB10-S3MS	250406408MS	Soil	X
NRS2009SB10-S3MSD	250406408MSD	Soil	X
NRS2009SB10-S3REMS	250406408REMS	Soil	X
NRS2009SB10-S3REMSD	250406408REMSD	Soil	X

Suffix Codes: MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

DATA REVIEWERS: Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: Monalisa B Beasley

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
JN	-	The compound/analyte was tentatively identified with estimated concentration.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

PEL Laboratories, Inc. - 2504064 - CLP Organics and Inorganics

SAMPLES: NRS2009SB04-S2, NRS2009SB04-S3, NRS2009SB08-S2, NRS2009SB08-S3, NRS2009SB10-S2, NRS2009SB10-S3, NRS2009SB15-S1, NRS2009SB15-S3, NRS2009SB16-S1, NRS2009SB16-S3, NRS2009SB17-S1, NRS2009SB17-S3, NRS2009SB18-S1, NRS2009SB18-S3, NRS2009FD01-S3, NRS2009SB19-S1

DIESEL RANGE ORGANICS (DRO TPH C10-28)

SUMMARY

I.) General:

The analyses for Diesel Range Organics (TPH C10-28) were performed by Gas Chromotography using SW-846 Method 8015.

II.) Overall Assessment of Data:

Based on Holding Time criteria, all initial analyses of the SDG samples were considered by the validator to be of preferable data quality to the reanalyses of the SDG samples. All results for the reanalyses of the SDG samples were rejected (R) based on data redundancy.

All other laboratory data were acceptable with qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

The time between sample collection and extraction for the reanalyses of the SDG samples was 22 to 23 days, which exceeded the 14 day QC limit for soil samples. Holding tine criteria states that all positive and non-detect results for these samples would be flagged as estimated (J) and (UJ). However, all results for the reanalysis samples were rejected (R) based on data redundancy, so no further data qualification was required.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

Diesel Range Organics were reported in method blank 11192MBK at 1.9 mg/kg. Since all results for the samples were previously rejected (R) based on data redundancy, no further data qualification was required.

Equipment and Field Blanks:

There were no detections in the equipment and field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

The Percent Recoveries (%Rs) of traicontane and o-terphenyl were outside their respective QC limits of 30-150% and 47-142% for the following samples:

Sample	triacontane, %R	o-terphenyl, %R
NRS2009SB04-S2		46.7%
NRS2009SB04-S2RE		44.4%
NRS2009SB08-S2	14.9%	14.4%
NRS2009SB08-S3REMSD		46.8%
NRS2009SB15-S3RE		46.1%
NRS2009SB18-S1	429%	
NRS2009SB18-S1RE		30.3%
NRS2009SB19-S1	255%	

The results for samples NRS2009SB04-S2 and NRS2009SB08-S2, which consisted entirely of non-detects, were flagged as estimated (UJ). The positive results for samples NRS2009SB18-S1 and NRS2009SB19-S1 were flagged as estimated (J). Since all results for the reanalysis samples were previously rejected (R) based on data redundancy, no further data qualification was required.

VI.) Laboratory Control Samples (LCS):

Two LCSs (blank spikes) were analyzed with this fraction of the SDG. The Percent Recovery (%R) of 27.3% for DRO in LCS sample 11110LCS was below the 51-108% QC limits. Data qualification based on LCS Recovery criteria was not required. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed on the initial and reanalyses of samples NRS2009SB08-S3 and NRS2009SB10-S3. The Percent Recoveries (%R's) were outside the 53-123% QC limits for the following spiked samples:

Sample	MS, %R	MSD, %R
NRS2009SB08-S3	44.6%	42.0%
NRS2009SB08-S3RE		38.7%
NRS2009SB10-S3	32.3%	33.3%
NRS2009SB10-S3RE		132%

Data qualification based on MS / MSD criteria was not required. No action was taken.

VIII.) Field Duplicates:

One set of field duplicate samples (NRS2009SB18-S3 / NRS2009FD01-S3) was identified for this SDG. The calculable Relative Percent Difference (RPD) for the reanalyses of the samples was 25%, which was within the 60% advisory QC limit for soil samples. There was no calculable RPD for the initial analyses of the samples. No action was required.

IX.) Internal Standards Performance (ISTD):

ISTD criteria were not required for this fraction. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

XII.) System Performance:

All System Performance criteria were met. No action was taken.

Appendix A

Qualified Form I's

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S2

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406401 Lab File ID: 64-1.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0032

PercentSolids: 73.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.7	U J SSL

200706 1716

Form I

AH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S2RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406401RE Lab File ID: 64-1.D

Sample wt/vol: 15.05 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2117

PercentSolids: 73.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	5.3	B R X- RE

050706 950

Form I

HH
8/2/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406402 Lab File ID: 64-2.D

Sample wt/vol: 15.06 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0102

PercentSolids: 74.9 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.6	U

280706 1715

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB04-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406402RE Lab File ID: 64-2.D

Sample wt/vol: 15.08 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2148

PercentSolids: 74.9 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB04 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	4.7	B R X-RE

050706 950

Form I

MLH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S2

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406403 Lab File ID: 64-3.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0133

PercentSolids: 68.2 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.9	U J SSL

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Form I

LLH 8/3/06

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S2RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406403RE Lab File ID: 64-3.D

Sample wt/vol: 15.22 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2218

PercentSolids: 68.2 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	66.4	B R x-RE

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Form I

LLH 8/3/06

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406404 Lab File ID: 64-4.D

Sample wt/vol: 15.15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/15/06 Time: 1253

PercentSolids: 70 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.8	U

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB08-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406404RE Lab File ID: 64-4.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 06/30/06 Time: 2248

PercentSolids: 70 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB08 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	15	B R X-RE

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Form I

MH 8/3/06

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S2

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406407 Lab File ID: 64-7.D

Sample wt/vol: 15.05 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0203

PercentSolids: 86.2 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	66.2	

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S2RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406407RE Lab File ID: 64-7d5.D

Sample wt/vol: 15.02 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0019

PercentSolids: 86.2 decanted : Dilution Factor: 5

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	118	B R X-RE

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406408 Lab File ID: 64-8.D

Sample wt/vol: 15.1 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/15/06 Time: 1525

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.7	U

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB10-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406408RE Lab File ID: 64-8.D

Sample wt/vol: 15.23 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0221

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB10 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	26.8	B R x-RE

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406411 Lab File ID: 64-11.D

Sample wt/vol: 15.22 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0303

PercentSolids: 91.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	15.5	

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S1RE1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406411RE1 Lab File ID: 64-11.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0352

PercentSolids: 91.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	17.4	B R X-RE

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code: PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406412 Lab File ID: 64-12.D

Sample wt/vol: 15.02 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0333

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	6.7	

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB15-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406412RE Lab File ID: 64-12.D

Sample wt/vol: 15.01 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0422

PercentSolids: 74.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB15 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	9.3	B R X-RE

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406413 Lab File ID: 64-13.D

Sample wt/vol: 15.06 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0403

PercentSolids: 82.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	4.3	

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Form I

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406413RE Lab File ID: 64-13.D

Sample wt/vol: 15.09 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0452

PercentSolids: 82.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	14.5	B R X-RE

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Form I

8/3/06

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8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406414 Lab File ID: 64-14.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0434

PercentSolids: 71.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.8	U

260706 1716

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB16-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406414RE Lab File ID: 64-14.D

Sample wt/vol: 15.16 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0523

PercentSolids: 71.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB16 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	10.5	B R X-RE

050706 950

Form I

RLH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406415 Lab File ID: 64-15.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0534

PercentSolids: 87.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.3	U

260706 1716

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S1RE1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406415RE1 Lab File ID: 64-15.D

Sample wt/vol: 15.16 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0553

PercentSolids: 87.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	13.5	B R x- RE

280706 1716

Form I

MH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406416 Lab File ID: 64-16.D

Sample wt/vol: 15.04 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0605

PercentSolids: 71.4 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.8	U

260706 1716

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB17-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406416RE Lab File ID: 64-16.D

Sample wt/vol: 15.14 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0623

PercentSolids: 71.4 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB17 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	8.6	B R X-RE

050706 950

Form I

LH 8/3/06

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406417 Lab File ID: 64-17.D

Sample wt/vol: 15.17 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0635

PercentSolids: 87.1 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	188	J

SSH

280706 1716

Form I

LLH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406417RE Lab File ID: 64-17d5.D

Sample wt/vol: 15.14 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0823

PercentSolids: 87.1 decanted : Dilution Factor: 5

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	87.6	B R X-RE

050706 950

Form I

ALH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code: PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406418 Lab File ID: 64-18.D

Sample wt/vol: 15.07 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0736

PercentSolids: 71.5 decanted: Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup: (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	3.9	

250706 1716

Form I

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB18-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406418RE Lab File ID: 64-18.D

Sample wt/vol: 15.01 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0853

PercentSolids: 71.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	9	B R X-RE

050706 950

Form I

LLH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD01-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406419 Lab File ID: 64-19.D

Sample wt/vol: 15.08 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0806

PercentSolids: 73.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	2.7	U

250706 1716

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD01-S3RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406419RE Lab File ID: 64-19.D

Sample wt/vol: 15.04 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0924

PercentSolids: 73.3 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB18 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	7	B R X-RE

050706 950

Form I

44 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB19-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406420 Lab File ID: 64-20.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/14/06

Level:(low/med) LOW Date Analyzed: 06/16/06 Time: 0636

PercentSolids: 88 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	116	J

SSH

280706 1716

Form I

LLH 8/3/06

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB19-S1RE

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504064

Matrix: SOIL Lab Sample ID: 250406420RE Lab File ID: 64-20.D

Sample wt/vol: 15.09 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 5 Date Extracted: 06/29/06

Level:(low/med) LOW Date Analyzed: 07/01/06 Time: 0954

PercentSolids: 88 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	200	B R x-RE

050706 950

Form I

AH 8/3/06

Appendix B

Validation Checklists and Example Calculations

STANDARD OPERATING PROCEDURE

Title: Evaluation of General Chemistry Data
Attachment A2: Data Assessment
(Wet Chemistry/GC Parameters)

Version: 3

Project CHEM CTO 251 20504004
Reviewer Amy Hogan
Fraction(s) TPH DEO

I.) Sample Tracking	YES	NO	N/A
Sample Traffic Report			
Present?	[✓]	—	—
Legible?	[✓]	—	—
ACTION: If no, request from Validata Project Manager.			
Cover Page			
Present?	[✓]	—	—
Do sample numbers on cover page agree with sample numbers on Chain-of-Custody Reports?	[✓]	—	—
ACTION: If no for any of the above, contact Validata Project Manager.			
Chain of Custody Form			
Present?	[✓]	—	—
Sample I.D.s - Present?	[✓]	—	—
Sampler's Name - Present?	[✓]	—	—
Date of Sampling - Present?	[✓]	—	—
Date of Shipment - Present?	[✓]	—	—
Date of Receipt at Laboratory - Present?	[✓]	—	—

	YES	NO	N/A
Shuttle Seal Intact at Laboratory?	[ ]	—	✓

ACTION: If no for any of the above, contact Validata Project Manager.

II.) Analytical Results

	YES	NO	N/A
Present?	[✓]	—	—
Detection Limits - Present?	[✓]	—	—
Units - Present?	[✓]	—	—
Sample Results - Present for all required compounds?	[✓]	—	—
Matrix - Description?	[✓]	—	—
Proper units for matrix?	[✓]	—	—
Units - Present for all required compounds?	[✓]	—	—
Are all "less than" values properly coded?	[✓]	—	—

ACTION: If no for any of the above, prepare Telephone Memorandum and contact the laboratory for corrected data.

III.) Holding Times

Holding Times - (Examine Chain of Custody Form)

	YES	NO	N/A
Were all holding times met (See holding time reference sheet)? Reanalyses past H.T.	[ ]	✓	—

ACTION: If no, flag all associated data as estimated (J or UJ). In the case holding times are grossly exceeded (>2X the holding time limit), flag non-detect data as rejected (R), and positive results as estimated (J).

IV.) Calibration	YES	NO	N/A
Is record of Calibration present?	[✓]	—	—
Are Calibration results within acceptance limits?	[✓]	—	—
Were all sample concentrations within the established calibration curve?	[✓]	—	—

ACTION: If no, flag associated positive sample results as estimated (J).

V.) Blanks			
Was a preparation blank run for each analytical batch?	[✓]	—	—
Were initial and continuing calibration blanks analyzed?	[✓]	—	—

ACTION: If no, flag associated positive sample results as estimated (J).

Do any blanks have reported concentrations greater than the Instrument Detection Limit ?	✓	[ ]	—

ACTION: If yes, flag associated positive sample results less than 5X the blank amount as undetected (U), with the detection limit being raised to the level of contamination in the sample.

VI.) Laboratory Control Sample Analysis			
Was an LCS analyzed for every 20 samples, when required?	[✓]	—	—

ACTION: If no, flag associated data as estimated (J) or (UJ).

Were LCS percent recoveries between ~~80-120%~~ method limits?	[ ]	✓	—

ACTION: If LCS percent recoveries were below 80%, flag associated positive and non-detect results as estimated (J) and (UJ). If recoveries were above 120%, flag only associated positive data as estimated (J).

	YES	NO	N/A
VII.) Matrix Spike Analysis			
Was a Matrix Spike sample analyzed for every 20 samples?	[✓]	—	—
Were MS/MSD results within 75 - 125%?	[✓]	—	—

ACTION: If no, use professional judgment to qualify the data.

VIII.) Laboratory Duplicate Sample Analysis			
Was a Laboratory Duplicate sample analyzed for every 20 samples where required?	[✓]	—	—
Were Duplicate results within established QC limits (± 20% waters, ±35% soils for results >5XCRDL, CRDL (±2XCRDL soils) when one or both duplicates are <5XCRDL)?	[✓]	—	—

ACTION: If no, qualify the associated positive and non-detect data as estimated (J) and (UJ).

IX.) Field Duplicates			
Are field duplicates identified?	[✓]	—	—

ACTION: If so, calculate the Relative Percent Difference. Make a note in the Data Acceptability Narrative.

X.) Transcription/Calculation			
Do reported sample results and detection limits match calculations performed using the raw data?	[✓]	—	—
Are there any other transcription/calculation errors (spot check 10% of calculations)?	—	[✓]	—

ACTION: If no, contact the Validata Project Manager.

ACTION: If yes, contact the Validata Project Manager.

XI.) Surrogate Recovery (Organics Only)

	YES	NO	N/A
Were the correct surrogates analyzed?	[✓]	___	___
Were surrogate results with in the acceptance limits?	[___]	✓	___

ACTION: If no, the associated data may be qualified. If low recoveries are obtained, flag associated positive results and quantitation limits as estimated (J and UJ). If high recoveries are obtained, flag positive detections only as estimated (J). If the surrogate recovery is less than 10%, flag all associated positive results as estimated, and associated non-detects as rejected (R). Professional judgment should be used to determine if additional or alternate action is appropriate.

XII.) Internal Standard Recovery (Organics Only)

Were the correct Internal Standards analyzed?	[___]	___	✓
Were Internal Standard area counts within -50% to +100% of the associated standard?	[___]	___	___

ACTION: If IS area counts are below -50%, qualify positive results and non-detects associated with that IS as estimated (J and UJ). If area counts are above +100%, flag positive detections only associated with that IS as estimated (J). If area counts are less than 25%, flag all associated positive results as estimated, and associated non-detects as rejected (R).

XIII.) Compound Identification (GC Only)

Were all reported positive detections within appropriate retention time windows?	[✓]	___	___

	YES	NO	N/A
ACTION: If no, examine the chromatogram to see if there are other peaks near the compound of interest that may be interfering with the signal. If no, qualify the compound as not detected.			
Was GC/MS confirmation performed when required?	[ ]		✓
ACTION: If no, contact the Validata Project Manager.			
Are quantitation limits affected by large, off-scale peaks?		[✓]	

ACTION: If yes, flag the affected results as unusable (R). If the interference is on-scale, the reviewer can provide an estimated quantitation limit (UJ) for each affected compound.

NOTE: Single-peak compound results should be checked for rough agreement between quantitative results obtained on the two GC columns. The reviewer should use professional judgment to decide whether a much larger concentration obtained on one column versus the other indicates the presence of an interfering compound. If an interfering compound is indicated, the lower of the two values should be reported and qualified as an estimated quantity (NJ).This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has obscured the attempt at a second column confirmation.

VALIDATA
Chemical Services, Inc.
4070 Balleycastle Lane, Duluth, GA 30097
(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY REPORT

COMPANY:	CH2M HILL
SITE NAME:	CTO-025
CONTRACTED LAB:	PEL Laboratories, Inc.
QA/QC LEVEL:	EPA Level IV
EPA SOW/METHOD:	EPA 1990 SOW
VALIDATION GUIDELINES:	*USEPA Region II, SOPs: HW-24 for the Validation of Organic Data Acquired using SW-846 Method 8260B, 1996; HW-22 for the Validation of Organic Data Acquired using SW-846 Method 8270B,1995; HW-2 for the Validation of Metals Data Acquired using SW-846 Method 6010B, 1992; Memorandum "Clarification of Scope of Work for Data Validation Services, Defense Reutilization and Marketing Office (DRMO), U.S. Naval Activity, Ceiba, Puerto Rico, 4/5/2005*
SAMPLE MATRIX:	Soil
TYPES OF ANALYSES:	Diesel Range Organics (DRO-TPH C10-28), Total Arsenic
SDG NUMBER:	2504066

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	DRO	Total Arsenic
NRS2009SB19-S3	250406601	Soil	X	
NRS2009FD02-S3	250406602	Soil	X	
NRS2009SB20-S1	250406603	Soil	X	
NRS2009SB20-S3	250406604	Soil	X	
NRS2009SB21-S1	250406605	Soil	X	
NRS2009SB21-S3	250406606	Soil	X	
NRS2009SB22-S1	250406607	Soil	X	
NRS2009SS01-B1	250406608	Soil		X
NRS2009SS02-B1	250406609	Soil		X
NRS2009SS03-B1	250406610	Soil		X
NRS2009SS04-B1	250406611	Soil		X
NRS2009SS05-B1	250406612	Soil		X
NRS2009SS06-B1	250406613	Soil		X
NRS2009SS07-B1	250406614	Soil		X
NRS2009FD03-B1	250406615	Soil		X

Client Sample #	Lab Sample #	Matrix	DRO	Total Arsenic
NRS2009SS08-B1	250406616	Soil		X
NRS2009SS09-B1	250406617	Soil		X
NRS2009SS10-B1	250406618	Soil		X
NRS2009SS11-B1	250406619	Soil		X
NRS2009SS12-B1	250406620	Soil		X
NRS2009SS13-B1	250406623	Soil		X
NRS2009SS14-B1	250406624	Soil		X
NRS2009SS15-B1	250406625	Soil		X
NRS2009SS12-B1MD	250406620MD	Soil		X
NRS2009SS12-B1MS	250406620MS	Soil		X
NRS2009SS12-B1MSD	250406620MSD	Soil		X
NRS2009SS15-B1MD	250406625MD	Soil		X
NRS2009SS15-B1MS	250406625MS	Soil		X
NRS2009SS15-B1MSD	250406625MSD	Soil		X

Suffix Codes: FD = FIELD DUPLICATE, MD = MATRIX DUPLICATE,
MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE

DATA REVIEWERS: Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: Mona Lisa B Beasley

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
JN	-	The compound/analyte was tentatively identified with estimated concentration.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

PEL Laboratories, Inc. - 2504066 - CLP Organics and Inorganics

SAMPLES: NRS2009SB19-S3, NRS2009FD02-S3, NRS2009SB20-S1, NRS2009SB20-S3, NRS2009SB21-S1, NRS2009SB21-S3, NRS2009SB22-S1, NRS2009SS01-B1, NRS2009SS02-B1, NRS2009SS03-B1, NRS2009SS04-B1, NRS2009SS05-B1, NRS2009SS06-B1, NRS2009SS07-B1, NRS2009FD03-B1, NRS2009SS08-B1, NRS2009SS09-B1, NRS2009SS10-B1, NRS2009SS11-B1, NRS2009SS12-B1, NRS2009SS13-B1, NRS2009SS14-B1, NRS2009SS15-B1

DIESEL RANGE ORGANICS (DRO TPH C10-28)

SUMMARY

I.) General:

The analyses for Diesel Range Organics (TPH C10-28) were performed by Gas Chromotography using SW-846 Method 8015.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was taken.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks associated with this SDG. No action was required.

Equipment and Field Blanks:

There were no detections in the equipment and field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was taken.

VI.) Laboratory Control Samples (LCS):

One LCS (blank spike) was analyzed with this fraction of the SDG. All LCS Recovery criteria were met. No action was required.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were not submitted for this SDG. Data qualification based on MS / MSD criteria was not required. No action was taken.

VIII.) Field Duplicates:

One set of field duplicate samples (NRS2009SB19-S3 / NRS2009FD02-S3) was identified for this SDG. There was no calculable Relative Percent Difference (RPD). No action was required.

IX.) Internal Standards Performance (ISTD):

ISTD criteria were not required for this fraction. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

XII.) System Performance:

All System Performance criteria were met. No action was taken.

TOTAL ARSENIC

SUMMARY

I.) General:

The analyses for total arsenic were performed using SW-846 Method 6010B.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualifiers were applied.

II.) Calibration:

All Initial and Continuing Calibration criteria were met. No data qualifiers were applied.

III.) CRDL Standards for AA and ICP:

CRDL standards were not applicable to this project. No action was required.

IV.) Blanks:

There were no detections for the metals analytes at values greater than the CRDL in the blanks associated with this SDG. No action was required.

V.) ICP Interference Check Sample Results:

All ICP Interference Check Sample Recovery criteria were met. No data qualifiers were applied.

VI.) ICP Serial Dilution Analysis:

All Serial Dilution Analysis criteria were met. No action was required.

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

VIII.) Duplicate Sample Analysis:

Duplicate Sample Analyses were performed on SDG samples NRS2009SS12-B1 and NRS2009SS15-B1. All Duplicate Sample Analysis criteria were met. No action was required.

IX.) Matrix Spike (MS):

Matrix spike and matrix spike duplicate analyses were performed on SDG samples NRS2009SS12-B1 and NRS2009SS15-B1. The Percent Recoveries (%R's) for samples NRS2009SS12-B1MS and NRS2009SS12-B1MSD were 0%, which were below the 75-125% QC limits. The post digestion spike for sample NRS2009SS12-B1 was 60.6%, which was below the 75-125%. The %Rs for the second set were within the QC limits. Based on professional judgement, all positive and non-detect results for arsenic in the SDG samples were flagged as estimated (J) and (UJ).

X.) Field Duplicates:

One set of field duplicate samples (NRS2009SS07-B1 / NRS2009FD03-B1) was identified for this SDG. There were no calculable Relative Percent Differences (RPDs). No action was required.

XI.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

XII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

XIII.) Quarterly Verification of Instrumental Parameters:

All criteria were met. No action was required.

Appendix A

Qualified Form I's

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB19-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406601 Lab File ID: 66-1.D

Sample wt/vol: 15.04 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/21/06 Time: 2216

PercentSolids: 67.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	3	U

170706 1244

Form I

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD02-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406602 Lab File ID: 66-2.D

Sample wt/vol: 15.06 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/21/06 Time: 2317

PercentSolids: 65.5 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB19 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	4	

170706 1244

Form I

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB20-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406603 Lab File ID: 66-3.D

Sample wt/vol: 15 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0017

PercentSolids: 97.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB20 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	130	

170706 1244

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB20-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406604 Lab File ID: 66-4.D

Sample wt/vol: 15.16 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0313

PercentSolids: 77.9 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB20 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	21.2	

170706 1244

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB21-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406605 Lab File ID: 66-5.D

Sample wt/vol: 15.08 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0418

PercentSolids: 83.6 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB21 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	12	

170706 1244

Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB21-S3

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406606 Lab File ID: 66-6.D

Sample wt/vol: 15.11 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0518

PercentSolids: 75.8 decanted : Dilution Factor: 1

Extraction: SONC Station ID: NRS2009SB21 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	3.2	

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Form I

1

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SB22-S1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406607 Lab File ID: 66-7D10.D

Sample wt/vol: 15.21 Units: G Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/22/06 Time: 0619

PercentSolids: 88.2 decanted : Dilution Factor: 10

Extraction: SONC Station ID: NRS2009SB22 Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: MG/KG

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	238	

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Form I

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS01-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406608

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 95.7 Station ID: NRS2009SS01

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.28		J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS02-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406609

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 96.1 Station ID: NRS2009SS02

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.2		J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

270606 1314

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS03-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406610

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 95.7 Station ID: NRS2009SS03

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.77	U	J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS04-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406611

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 92.7 Station ID: NRS2009SS04

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.62	U	J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS05-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406612

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 94.9 Station ID: NRS2009SS05

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.576	U	J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS06-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406613

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 93.3 Station ID: NRS2009SS06

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M	
7440-38-2	Arsenic	0.504	U	J	P	MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS07-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406614

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 93.2 Station ID: NRS2009SS07

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.63	U	J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD03-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406615

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 93.6 Station ID: NRS2009SS07

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M	
7440-38-2	Arsenic	2.48	U	J	P	MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS08-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406616

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 96.2 Station ID: NRS2009SS08

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M	
7440-38-2	Arsenic	1.27		J	P	MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS09-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406617

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 94.2 Station ID: NRS2009SS09

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M	
7440-38-2	Arsenic	3.23		J	P	MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS10-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406618

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 94.9 Station ID: NRS2009SS10

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M	
7440-38-2	Arsenic	1.08	U	J	P	MDL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS11-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406619

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 92.3 Station ID: NRS2009SS11

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2	U	J	P

MJ

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS12-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406620

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 96.8 Station ID: NRS2009SS12

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.76	U	~~N~~ J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS13-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406623

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 95.2 Station ID: NRS2009SS13

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.097	U	J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS14-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406624

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 97 Station ID: NRS2009SS14

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M	
7440-38-2	Arsenic	0.483	U	J	P	MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS15-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504066

Matrix: SOIL Lab Sample ID: 250406625

Level:(low/med) LOW Date Received: 6/10/2006

PercentSolids: 97.2 Station ID: NRS2009SS15

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.14	U	J	P

MSL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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ALH 8/3/06

Appendix B

Validation Checklists and Example Calculations

STANDARD OPERATING PROCEDURE

Title: Evaluation of General Chemistry Data
Attachment A2: Data Assessment
(Wet Chemistry/GC Parameters)

Version: 3

Project CH2M Hill CTO: 25 / 2504066
Reviewer Amy Hogan
Fraction(s) TPH DRO

I.) Sample Tracking	YES	NO	N/A
Sample Traffic Report Present?	[✓]	—	—
Legible?	[✓]	—	—
ACTION: If no, request from Validata Project Manager.			
Cover Page Present?	[✓]	—	—
Do sample numbers on cover page agree with sample numbers on Chain-of-Custody Reports?	[✓]	—	—
ACTION: If no for any of the above, contact Validata Project Manager.			
Chain of Custody Form Present?	[✓]	—	—
Sample I.D.s - Present?	[✓]	—	—
Sampler's Name - Present?	[✓]	—	—
Date of Sampling - Present?	[✓]	—	—
Date of Shipment - Present?	[✓]	—	—
Date of Receipt at Laboratory - Present?	[✓]	—	—

	YES	NO	N/A
Shuttle Seal Intact at Laboratory?	[ ]	—	✓

ACTION: If no for any of the above, contact Validata Project Manager.

II.) Analytical Results

	YES	NO	N/A
Present?	[✓]	—	—
Detection Limits - Present?	[✓]	—	—
Units - Present?	[✓]	—	—
Sample Results - Present for all required compounds?	[✓]	—	—
Matrix - Description?	[✓]	—	—
Proper units for matrix?	[✓]	—	—
Units - Present for all required compounds?	[✓]	—	—
Are all "less than" values properly coded?	[✓]	—	—

ACTION: If no for any of the above, prepare Telephone Memorandum and contact the laboratory for corrected data.

III.) Holding Times

Holding Times - (Examine Chain of Custody Form)

	YES	NO	N/A
Were all holding times met (See holding time reference sheet)?	[✓]	—	—

ACTION: If no, flag all associated data as estimated (J or UJ). In the case holding times are grossly exceeded (>2X the holding time limit), flag non-detect data as rejected (R), and positive results as estimated (J).

	YES	NO	N/A
IV.) Calibration			
Is record of Calibration present?	✓	—	—
Are Calibration results within acceptance limits?	✓	—	—
Were all sample concentrations within the established calibration curve?	✓	—	—

ACTION: If no, flag associated positive sample results as estimated (J).

	YES	NO	N/A
V.) Blanks			
Was a preparation blank run for each analytical batch?	✓	—	—
Were initial and continuing calibration blanks analyzed?	✓	—	—

ACTION: If no, flag associated positive sample results as estimated (J).

	YES	NO	N/A
Do any blanks have reported concentrations greater than the Instrument Detection Limit ?	—	✓	—

ACTION: If yes, flag associated positive sample results less than 5X the blank amount as undetected (U), with the detection limit being raised to the level of contamination in the sample.

	YES	NO	N/A
VI.) Laboratory Control Sample Analysis			
Was an LCS analyzed for every 20 samples, when required?	✓	—	—

ACTION: If no, flag associated data as estimated (J) or (UJ).

	YES	NO	N/A
Were LCS percent recoveries between ~~80-120%~~ method limits?	✓	—	—

ACTION: If LCS percent recoveries were below 80%, flag associated positive and non-detect results as estimated (J) and (UJ). If recoveries were above 120%, flag only associated positive data as estimated (J).

	YES	NO	N/A
VII.) Matrix Spike Analysis			
Was a Matrix Spike sample analyzed for every 20 samples?	[✓] AHA 7/27/04	—	✓
Were MS/MSD results within 75 - 125%?	[ ]	—	—
ACTION: If no, use professional judgment to qualify the data.			
VIII.) Laboratory Duplicate Sample Analysis			
Was a Laboratory Duplicate sample analyzed for every 20 samples where required?	[ ]	—	✓
Were Duplicate results within established QC limits (± 20% waters, ±35% soils for results >5XCRDL, CRDL (±2XCRDL soils) when one or both duplicates are <5XCRDL)?	[ ]	—	—
ACTION: If no, qualify the associated positive and non-detect data as estimated (J) and (UJ).			
IX.) Field Duplicates			
Are field duplicates identified?	[✓]	—	—
ACTION: If so, calculate the Relative Percent Difference. Make a note in the Data Acceptability Narrative.			
X.) Transcription/Calculation			
Do reported sample results and detection limits match calculations performed using the raw data?	[✓]	—	—
ACTION: If no, contact the Validata Project Manager.			
Are there any other transcription/calculation errors (spot check 10% of calculations)?	—	[✓]	—
ACTION: If yes, contact the Validata Project Manager.			

	YES	NO	N/A
XI.) Surrogate Recovery (Organics Only)			
Were the correct surrogates analyzed?	[✓]	—	—
Were surrogate results with in the acceptance limits?	[✓]	—	—

ACTION: If no, the associated data may be qualified. If low recoveries are obtained, flag associated positive results and quantitation limits as estimated (J and UJ). If high recoveries are obtained, flag positive detections only as estimated (J). If the surrogate recovery is less than 10%, flag all associated positive results as estimated, and associated non-detects as rejected (R). Professional judgment should be used to determine if additional or alternate action is appropriate.

XII.) Internal Standard Recovery (Organics Only)			
Were the correct Internal Standards analyzed?	[ ]	—	[✓]
Were Internal Standard area counts within -50% to +100% of the associated standard?	[ ]	—	—

ACTION: If IS area counts are below -50%, qualify positive results and non-detects associated with that IS as estimated (J and UJ). If area counts are above +100%, flag positive detections only associated with that IS as estimated (J). If area counts are less than 25%, flag all associated positive results as estimated, and associated non-detects as rejected (R).

XIII.) Compound Identification (GC Only)			
Were all reported positive detections within appropriate retention time windows?	[✓]	—	—

	YES	NO	N/A
ACTION: If no, examine the chromatogram to see if there are other peaks near the compound of interest that may be interfering with the signal. If no, qualify the compound as not detected.			
Was GC/MS confirmation performed when required?	[ ]	—	—
ACTION: If no, contact the Validata Project Manager.			
Are quantitation limits affected by large, off-scale peaks?	—	[✓]	—

ACTION: If yes, flag the affected results as unusable (R). If the interference is on-scale, the reviewer can provide an estimated quantitation limit (UJ) for each affected compound.

NOTE: Single-peak compound results should be checked for rough agreement between quantitative results obtained on the two GC columns. The reviewer should use professional judgment to decide whether a much larger concentration obtained on one column versus the other indicates the presence of an interfering compound. If an interfering compound is indicated, the lower of the two values should be reported and qualified as an estimated quantity (NJ).This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has obscured the attempt at a second column confirmation.

STANDARD OPERATING PROCEDURE

Title: Evaluation of Metals Analyses
Attachment B2: Data Assessment
(Total Review-Metals)

Version: 3.8
SOW: SW-846 6010B
SOP: NFG Feb. 1994

Arsenic only

Project CH2M Hill CTO 25 / 25040066

Reviewer Amy Hogan

		YES	NO	N/A
B2.1	Chain-of-Custody - Present or on file?	[✓]	—	—
	Legible?	[✓]	—	—
B2.2	Cover Page - Present?	[✓]	—	—
	ACTION: If no, contact the Validata Project Manager.			
	Do sample numbers on Chain-of-Custody (C-O-C) agree with sample numbers on:			
	(a) Cover page?	[✓]	—	—
	(b) Form I's?	[✓]	—	—
	(c) Validata Sample Identification Summary (if used)?	[ ]	—	✓
	ACTION: If no for any of the above, contact the Validata Project Manager.			
B2.3	Form I (Final Data) -Are all Forms I's present and complete?	[✓]	—	—
	ACTION: If no, contact the Validata Project Manager.			
	Are correct units (ug/L for water samples and mg/kg for soil samples) indicated in Form I's?	[✓]	—	—
	Are sample results for each parameter corrected for percent solids on soils?	[✓]	—	—
	Are all "less than" values properly coded with "U"?	[✓]	—	—
	ACTION: If no for any of the above, contact the Validata Project Manager.			
	Was a brief physical description of samples given in the comments section?	[ ]	✓	—

	YES	NO	N/A
ACTION: If no for any of the above, note under "Overall Assessment" in the Data Validation Narrative.			
B2.4 Holding Times (C-O-C vs. data package) - Aqueous (apply to soil matrix at reviewer's discretion): If criteria other than water criteria are used for soil samples, comment in data review narrative.			
Metals (6 months), PH < 2 exceeded?	—	✓	—
ACTION: Prepare a list of all samples and analytes for which holding times have been exceeded. Specify the number of days from collection date to the analysis date (from raw data). If holding times have been exceeded, flag all results as estimated (J) and (UJ). If a gross exceedance in holding times exists (holding times are more than 2X the above limits) or professional judgement indicates, reject (R) values less than IDL.			
B2.5 Raw Data (*Weights, dilutions and volumes used to obtain values.)			
Digestion Log* (CLP Form XIII) for flame AA/ICP present?	✓	—	—
Percent solids calculation present for soil (sediments)?	✓	—	—
Are preparation dates present on Digestion Log?	✓	—	—
ACTION: If no for any of the above, contact the Validata project Mananger.			
B2.5.1 Raw Data –			
Measurement read out record present for ICP?	✓	—	—
B2.5.2 Are all raw data to support all sample analyses and QC operations present?	✓	—	—
Legible?	✓	—	—
Properly Labeled?	✓	—	—
ACTION: If no for any of above, contact the Validata Project Manager.			
B2.5.3 Is record of at least 2 point calibration present for ICP?	✓	—	—

	YES	NO	N/A
ACTION: If no for any of the above (section B2.5.4), contact the Validata Project Manager.			

B2.6 Data Validation and Verification

B2.6.1 Form II (Initial and Continuing Calibration Verification) -

B2.6.1.2 Are all calibration standards (initial and continuing) within controls limits?			
Metals 90-110%	[✓]	—	—
Are all calibration standards (initial and continuing) within 50-150%?	[✓]	—	—
If no, are any recoveries:			
a. between 75-89%?	—	[ ]	—
b. or between 111-125%?	—	[ ]	—
ACTION: For high recoveries as in "b" above, flag as estimated (J) all positive data, and for low recoveries in "a" above, flag positive data and data <IDL as estimated (UJ) analyzed between the standard with the above recovery and the nearest calibration standard.			
Are any recoveries:			
c. less than 75%?	—	[ ]	—
ACTION: If yes, reject (R) as unacceptable the positive data for which standard is the nearest adjacent standard. Flag the associated non-detects as estimated (UJ). Are any recoveries:			
d. greater than 125%?	—	[ ]	—
ACTION: If yes, reject (R) as unacceptable positive results for which standard is the nearest adjacent standard.			
Was continuing calibration performed every 10 samples or every 2 hours?	[✓]	—	—
ACTION: If no, flag the excess sample data (eleventh and up) as estimated (J) or (UJ).			
B2.6.1.3 Was a CRI standard for ICP (at 2X CRDL or IDL, whichever is greater)) run at the beginning of the sample run, but not before ICV and at least once during each 8-hour period (exemptions: Al, Ba, Ca, Fe, Mg, Na and K)?	[ ]	—	— ✓

	YES	NO	N/A
ACTION: If no, comment in narrative. Use professional judgment to qualify the data.			
Were the CRI %R's within the 80-120% QC limits?	[ ]	—	—
ACTION: If no, flag as estimated (UJ) and (J) all non-detect results and all positive results up to 3X CRDL, for which the CRI standard was the nearest adjacent CRI standard.			
B2.6.2 Form III (Initial and Continuing Calibration Blanks) **Note: Do not use a blank value to qualify data as undetected (U) if that blank was rejected for any reason.**			
B2.6.2.1 Present and complete?	[✓]	—	—
ACTION: If no, contact the Validata project manager.			
B2.6.2.2 Are all calibration blanks < Contract Required Detection Limits (CRDL)?	[ ]	✓	—
Are all calibration blanks less than Instrument Detection Limit (if IDL > CRDL)?	[ ]	✓	—
ACTION: If no for any of above, make a table of the highest calibration blank value for each analyte on Data Summary Sheet. Flag as undetected (U) on Form I's throughout the SDG all results greater than IDL but less than 5X the highest blank amount.			
Did any calibration blanks have negative results with absolute values greater then the IDL/CRDL?	—	[ ]✓	—
ACTION: If yes, make a table of the highest calibration blank absolute value for each analyte on Data Summary Sheet. Flag as estimated (UJ) and (J) on Form I's throughout the SDG all non-detects and all results greater than IDL but less than 5X the highest blank amount for that analyte.			
B2.6.2.3 Was an initial calibration blank analyzed?	[✓]	—	—
Was a continuing calibration blank analyzed after every 10 samples or every 2 hours (whichever is more frequent)?	[✓]	—	—
ACTION: If no, flag as estimated (J) all positive results for sample not analyzed within 5 samples of a calibration blank.			
B2.6.2.4 Does the concentration of any blank fall below IDL, other than as noted in section B2.6.2.2?	—	[✓]	—

	YES	NO	N/A
ACTION: If yes, use professional judgement to qualify the data.			
B2.6.3 Form III (Preparation Blank) **Note: Do not use a blank value to qualify data as undetected (U) if that blank was rejected for any reason.**			
B2.6.3.1 Was one Prep. blank analyzed for: each 20 samples:	[✓]	—	—
each batch?	[✓]	—	—
each matrix type?	[✓]	—	—
ACTION: If no for any of the above, flag as estimated (J) all associated positive results for which a Prep. blank was not analyzed. (NOTE: If only one blank was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated.)			
B2.6.3.2 Do concentrations of Prep. blank fall below IDL when IDL is greater than CRDL?	[✓]	—	—
ACTION: If no, include the highest valuein the table generated for section B2.6.2.2 and flag as undetected (U) all associated results greater than IDL but less than 5X the preparation blank amount.			
Do any Prep. blanks have negative results with absolute values greater then the IDL/CRDL?	—	[✓]	—
ACTION: If yes, include in the table for section B2.6.2.2 the highest Prep. blank absolute value for each analyte. Flag as estimated (UJ) and (J) on Form I's all associated non-detects and all results greater than IDL but less than 5X the highest blank amount for that analyte.			
B2.6.3.3 Is the concentration of the Prep. blank greater than the CRDL when IDL is less than CRDL?	—	[✓]	—
If yes, is the concentration of the sample with the lowest positive detection of that analyte less than 5 times the Prep. blank value?	—	[ ]	—
ACTION: If yes, flag as estimated (J) all associated positive data that has a concentration of less than 5 times the Prep. blank value, but not previously flagged as undetected (U).			

	YES	NO	N/A
B2.6.3.4 Does the concentration of the Prep. blank fall below the IDL?	__	[__]	__

ACTION: If yes, use professional judgement to qualify the data.

B2.6.4 Form I (Field/Equipment /Rinsate Blank)
Note: Do not use a blank value to qualify data as undetected (U) if that blank was rejected for any reason.

Do concentrations of field blanks fall below IDL for all aqueous and soil parameters?	[__]	__	✓
If no, was field blank value already rejected due to another QC criterion?	[__]	__	__

ACTION: If no, flag as undetected (U) all aqueous and soil/sediment data (except field blank) that have a concentration less than five times the field blank value not flagged with a "U" (less than).

B2.6.4.1 Was one field blank analyzed for each 20 samples or each sampling trip, whichever is greater?	[__]	__	__

ACTION: If no, comment in the Data Validation Narrative.

B2.6.5 Form IV (ICP Interference Check Sample)

B2.6.5.1 Present and complete for each sample analysis run or twice per 8 hour shift, whichever is more frequent (NOTE: The ICS should **not** be run before the Initial Calibration Verification)?	[✓]	__	__
B2.6.5.2 Are any results >IDL for analytes which were not present in the ICS solution?	__	[✓]	__

ACTION: If yes, flag as estimated (J) the positive results for that analyte in samples with comparable or higher levels of Al, Ca, Fe or Mg. Comment in the Data Validation Narrative that false positives may exist.

Are any negative results with absolute values >IDL observed for analytes which were not present in the ICS solution?	__	[✓]	__

ACTION: If yes, flag as estimated (UJ) the non-detect results for that analyte in samples with comparable or higher levels of Al, Ca, Fe or Mg. Comment in the Data Validation Narrative that false negatives may exist.

	YES	NO	N/A
B2.6.5.3 Are any Interference Check Sample results outside of control limits (± 20%)?	—	[✓]	—
If yes, is ICS recovery between 50-79% of mean value?	—	[ ]	—
ACTION: If yes, flag as estimated (J) and/or (UJ) associated sample results.			
Is ICS recovery above 120%?	—	[✓]	—
ACTION: If yes, flag all positive results as estimated (J).			
Is ICS recovery less than 50%?	—	[ ]	—
ACTION: If yes, reject (R) associated sample results.			
B2.6.6 Form IX (ICP Serial Dilution Analysis)			
B2.6.6.1 Was Serial Dilution analysis performed for sample results greater than 50X IDL for:			
each 20 samples?	[✓]	—	—
each matrix type?	[✓]	—	—
each concentration range (i.e. low, med., high)?	[ ]	—	[✓]
ACTION: If no, flag all associated data as estimated (J) for which Serial Dilution Analysis was not performed.			
B2.6.6.2 Was field blank(s) used for Serial Dilution Analysis?	—	[✓]	—
If yes, was field blank described as such on the Chain-of-Custody Report?	—	[ ]	—
ACTION: If yes, flag all associated data >50 X IDL as estimated (J).			
B2.6.6.3 Are all ICP Serial Dilution results within control limits of 10% for sample results at least 50 X IDL?	[✓]	—	—
ACTION: If no, flag as estimated (J) all associated positive sample results for which percent difference is greater than 10%. If evidence of negative interference exists, use professional judgement to qualify the data. Flag data throughout the same matrix of the Sample Delivery Group (SDG).			

	YES	NO	N/A
B2.6.7 Form V (Spike Sample Recovery) [Note: Not required for Ca, Mg, K, and Na (both matrices), Al, and Fe (soil only)].			
B2.6.7.1 Present and complete for:			
each 20 samples?	[✓]	—	—
each matrix type?	[✓]	—	—
each conc. range (i.e. low, med., high)?	[ ]	—	✓
ACTION: If no for any of the above, flag as estimated (J) all data for which a spiked sample was not analyzed. (NOTE: If one spiked sample was analyzed for more than 20 samples, then the first 20 samples analyzed do not have to be flagged as estimated).			
B2.6.7.2 Was a field blank used as the spiked sample?	—	[✓]	—
If yes, was field blank described as such on the Chain-of-Custody Report?	—	[ ]	—
ACTION: If yes, flag all positive data as estimated (J) for which a field blank was used as the spiked sample.			
B2.6.7.3 Are all recoveries within 75-125% control limits?	[ ]	✓	—
If no: A.) Is sample concentration greater than four times the spike concentration?	—	[ ]	—
ACTION: If yes, do not flag data based on spike recoveries for analytes whose concentrations are greater than four times the spike added. Consider only those analytes on Form V for which sample concentration was <4X the spike concentration.			
Are any spike recoveries:			
a). less than 30%?	✓	[ ]	—
ACTION: If yes, reject (R) all sample results <IDL; flag results >IDL as estimated (J).			
b). between 30-74%?	—	[✓]	—
ACTION: If yes, flag all sample results >IDL as estimated (J); flag all results <IDL as estimated (UJ).			
c). greater than 125%?	—	[✓]	—

	YES	NO	N/A
ACTION: If yes, flag all sample results of the same matrix type for the analysis >IDL as estimated (J).			
B.) Was a post digestion/post-distillation spike performed when the pre-distillation/pre-digestion spike did not meet criteria, even if the sample concentration was > 4X the original spike concentration?	[✓]	—	—
ACTION: If no, comment in the Data Validation Narrative, but do not flag data > 4X the spike amount.			
B2.6.8 Form VI (Lab Duplicates)			
B2.6.8.1 Present and complete for:			
each 20 samples?	[✓]	—	—
each matrix type?	[✓]	—	—
each concen. range (i.e. low, med., high)?	[ ]	—	✓
ACTION: If no for any above, flag as estimated (J) all data > CRDL for which duplicate sample was not analyzed. Note: If one duplicate sample was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			
B2.6.8.2 Are all values on the Data Summary Sheet within the control limits (20% for aqueous, 35% for soil) for sample and duplicate values >5X CRDL?	[✓]	—	—
ACTION: If no, flag as estimated (J) and/or (UJ) all associated sample data of the same matrix.			
B2.6.8.3 Was a field blank used for duplicate analysis?	—	[✓]	—
If yes, was field blank identified as such on the Chain-of-Custody Report?	—	[ ]	—
ACTION: If yes, flag all data >CRDL as estimated (J) for which field blank was used as a duplicate.			
B2.6.8.4 Aqueous Samples			
Is any difference between sample and duplicate greater than CRDL where sample and/or duplicate is less than 5 times CRDL but greater than CRDL?	—	[ ]	✓
ACTION: If yes, flag as estimated (J) and/or (UJ) all associated data.			

	YES	NO	N/A
B2.6.8.5 Soil/Sediment			
Is any difference between sample and duplicate greater than 2 times CRDL where sample and/or duplicate is less than 5 times CRDL but greater than CRDL?	—	[✓]	—

ACTION: If yes, flag as estimated (J) and/or (UJ) all associated data.

B2.6.9 Field Duplicates

B2.6.9.1 Were field duplicates analyzed and identified as such?	[✓]	—	—

ACTION: If yes and the pairs are identifiable, prepare a summary table for each sample/duplicate pair in the Data Validation Narrative. Calculate RPD where both balues are greater than CRDL.

B2.6.9.2 Advisory control limits:

Aqueous Samples:	30% RPD or CRDL
Soil Samples:	60% RPD or CRDL

Are all values within control limits?	[✓]	—	—

ACTION: If no, flag the associated positive results as estimated (J), and note exceedances in the Data Validation Varrative.

B2.6.10 Form VII (Instrument Detection Limits) -

B2.6.10.1 Are IDL's present for all analytes?	[✓]	—	—
for both AA and ICP when both are used for same analyte?	[ ]	—	—

ACTION: If no for any of the above, contact the Validata project manager, who will contact the laboratory.

B2.6.10.2 Is IDL greater than CRDL for any analyte?	—	[✓]	—

If yes, make a note in the data validation narrative.

B2.6.11 Form VII (Laboratory Control Sample)

B2.6.11.1 Was one LCS prepared and analyzed for: every 20 water samples?	[✓]	—	—
every month for solid samples?	[✓]	—	—

ACTION: If no for any of the above, contact the Validata Project Manager for submittal of LCS results.

	YES	NO	N/A
Flag as estimated (J) all aqueous data for which LCS was not analyzed.			
NOTE: If only one LCS was analyzed for more than 20 samples, then the first 20 samples closest to the LCS do not have to be flagged as estimated.			
Aqueous LCS			
B2.6.11.2 Are all LCS values on Data Summary Sheet within the 80-120% control limits?	[ ]	—	✓
If no, is any LCS value:			
less than 50%?	—	[ ]	—
ACTION: If yes, reject (R) all associated data.			
between 50% and 79%?	—	[ ]	—
ACTION: If yes, flag all associated data <IDL as estimated (UJ).			
greater than 120%?	—	[ ]	—
ACTION: If yes, flag all positive results (i.e. not flagged with a "U") as estimated (J).			
Soil LCS			
Are any recoveries outside the 80-120% QC limits?	—	[✓]	—
ACTION: If any recoveries are above the 80-120% QC limits, flag associated positive data as estimated (J). If recoveries are below QC limits, flag associated positive and non-detect results as estimated (J) and (UJ).			
B2.6.11.3 Is "NC" reported for any analyte in % R column of Form VII?	—	[ ]	✓
If yes, does concentration of the analyte fall within acceptable range of LCS?	[ ]	—	—
ACTION: If no, flag associated data as estimated (J).			
B2.6.12 Dissolved Inorganics (only if client requested)			
B2.6.12.1 Were any analyses performed for dissolved as well as total analytes on the same sample?	—	[ ]	✓

		YES	NO	N/A
	If yes, apply the following questions only if both dissolved and total constituents are above CRDL (For SAS parameters: above 5 X IDL).			
B2.6.12.2	Is the concentration of any dissolved analyte greater than its total concentration by more than 15% (See Appendix A for formula)?	—	[ ]	—
ACTION:	If yes, prepare a list comparing differences between all dissolved and total analytes. Compute the differences as a percent of the total analyte only when both are above CRDL (5 X IDL for SAS parameters). If %D is more than 15%, flag both dissolved and total values as estimated (J).			
B2.6.13	Forms I to IX - Sample Result, Calculation/ Transcription Verification			
B2.6.13.1	Site sample number?	[✓]	—	—
	Lab ID sample number?	[✓]	—	—
	QC report number?	[✓]	—	—
	date?	[✓]	—	—
	correct units?	[✓]	—	—
	matrix?	[✓]	—	—
ACTION:	If no for any of above, note under contract problem/non-compliance section of Data Assessment Narrative.			
B2.6.13.2	Perform a 10% spot check of all types of computation/transcription for Forms I-IX. Are there any transcription/computation errors for analytes analyzed by ICP?	—	[✓]	—
ACTION:	If yes, perform a 100% check of the remaining data for the computation or transcription found to be in error and document any other errors found. Contact the Validata Project Manager.			
B2.6.14	Forms XI, XII, XIII (Quarterly Verification of Instrumental Parameters)			
B2.6.14.1	Is quarterly verification report present or on file for:			
	Instrument Detection Limits?	[✓]	—	—
	ICP Interelement Correction Factors?	[✓]	—	—

	YES	NO	N/A
ICP Linear Ranges?	[✓]	—	—

ACTION: If no, contact the Validata Project Manager.

B2.6.14.2 Was any sample result higher than the linear range of the ICP by more than 10%?	—	[✓]	—
Was any sample result higher than the highest calibration standard for non-ICP parameters?	—	[✓]	—
If ICP was used to analyze As, Tl, Se or Pb, was any result <5X ICP IDL reported?	—	[✓]	—

ACTION: If yes for any of the above, flag result reported on Form I as estimated (J) and (UJ).

B2.6.15 Examine the raw data for any anomalies (i.e., baseline shifts, negative absorbances, omissions, legibility, etc). Are any anomalies present?	—	[✓]	—

ACTION: If yes, use professional judgement to qualify the data. Contact the Validata Project Manager for resubmissions if necessary.

B2.6.16 <u>Overall Assessment of Data/General</u>

After all other data qualification is completed, are any laboratory flags remaining (other than U, J, or R)?	—	[✓]	—

ACTION: If yes, cross out (remove) the remaining lab flags, unless project-specific memo states otherwise.

Were any samples reanalyzed?	—	[✓]	—

ACTION: If yes, comment in Data Validation Narrative as to which sample analysis is considered to be of preferable data quality.

Evaluate in this section any technical problems which have not been previously addressed.

Assess the overall quality of the data. Consider the additive nature of the analytical problems encountered and make recommedations for further data qualification when appropriate.

Comment briefly on the analytical limitations of the data, incorporating project-specific considerations when sufficient information is available. Include a summary of rejected ("R" flagged) data.

VALIDATA
Chemical Services, Inc.
4070 Balleycastle Lane, Duluth, GA 30097
(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA VALIDATION SUMMARY REPORT

COMPANY:	CH2M HILL
SITE NAME:	CTO-025
CONTRACTED LAB:	PEL Laboratories, Inc.
QA/QC LEVEL:	EPA Level IV
EPA SOW/METHOD:	EPA 1990 SOW
VALIDATION GUIDELINES:	*USEPA Region II, SOPs: HW-24 for the Validation of Organic Data Acquired using SW-846 Method 8260B, 1996; HW-22 for the Validation of Organic Data Acquired using SW-846 Method 8270B,1995; HW-2 for the Validation of Metals Data Acquired using SW-846 Method 6010B, 1992; Memorandum "Clarification of Scope of Work for Data Validation Services, Defense Reutilization and Marketing Office (DRMO), U.S. Naval Activity, Ceiba, Puerto Rico, 4/5/2005*
SAMPLE MATRICES:	Solid and Water
TYPES OF ANALYSES:	Diesel Range Organics (DRO-TPH C10-28), Total Arsenic
SDG NUMBER:	2504068

OVERVIEW

SAMPLES:

Client Sample #	Lab Sample #	Matrix	DRO	Total Arsenic
NRS2009SS16-B1	250406801	Soil		X
NRS2009SS17-B1	250406802	Soil		X
NRS2009FD04-B1	250406803	Soil		X
NRS2009SS18-B1	250406804	Soil		X
NRS2009SS19-B1	250406805	Soil		X
NRS2009SS20-B1	250406806	Soil		X
NRS2009SS21-B1	250406807	Soil		X
NRS2009FD05-B1	250406808	Soil		X
NRS2009SS22-B1	250406809	Soil		X
NRS2009SS23-B1	250406810	Soil		X
NRS2009SS24-B1	250406811	Soil		X
NRS2009EB01-0606	250406812	Water	X	
NRS2009EB02-0606	250404813	Water		X
NRS2009FB01-0606	250406814	Water	X	
NRS2009FB02-0606	250406815	Water		X

Suffix Codes: DL = DILUTION, EB = EQUIPMENT BLANK,
FB = FIELD BLANK, FD = FIELD DUPLICATE

DATA REVIEWERS: Amy L. Hogan, Kevin C. Harmon, Monalisa B. Beasley

RELEASE SIGNATURE: Monalisa B Beasley

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
JN	-	The compound/analyte was tentatively identified with estimated concentration.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

PEL Laboratories, Inc. - 2504068 - CLP Organics and Inorganics

SAMPLES: NRS2009SS16-B1, NRS2009SS17-B1, NRS2009FD04-B1, NRS2009SS18-B1, NRS2009SS19-B1, NRS2009SS20-B1, NRS2009SS21-B1, NRS2009FD05-B1, NRS2009SS22-B1, NRS2009SS23-B1, NRS2009SS24-B1, NRS2009EB01-0606, NRS2009EB02-0606, NRS2009FB01-0606, NRS2009FB02-0606

DIESEL RANGE ORGANICS (DRO TPH C10-28)

SUMMARY

I.) General:

The analyses for Diesel Range Organics (TPH C10-28) were performed by Gas Chromatography using SW-846 Method 8015.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No action was taken.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks associated with this SDG. No action was required.

Equipment and Field Blanks:

There were no detections in the equipment and field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was taken.

VI.) Laboratory Control Samples (LCS):

One LCS (blank spike) was analyzed with this fraction of the SDG. All LCS Recovery criteria were met. No action was required.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were not submitted for this SDG. Data qualification based on MS / MSD criteria was not required. No action was taken.

VIII.) Field Duplicates:

There were no field duplicate samples identified for this SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

ISTD criteria were not required for this fraction. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was necessary.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

XII.) System Performance:

All System Performance criteria were met. No action was taken.

TOTAL ARSENIC

SUMMARY

I.) General:

The analyses for total arsenic were performed using SW-846 Method 6010B.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualification.

MAJOR ISSUES

There were no major issues for this fraction of the SDG.

MINOR ISSUES

I.) Holding Times:

All Holding Time criteria were met. No data qualifiers were applied.

II.) Calibration:

All Initial and Continuing Calibration criteria were met. No data qualifiers were applied.

III.) CRDL Standards for AA and ICP:

CRDL standards were not applicable to this project. No action was required.

IV.) Blanks:

There were no detections for the metals analytes at values greater than the CRDL in the blanks associated with this SDG. No action was required.

V.) ICP Interference Check Sample Results:

All ICP Interference Check Sample Recovery criteria were met. No data qualifiers were applied.

VI.) ICP Serial Dilution Analysis:

All Serial Dilution Analysis criteria were met. No action was required.

VII.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was necessary.

VIII.) Duplicate Sample Analysis:

Duplicate Sample Analyses were performed on batch QC. All Duplicate Sample Analysis criteria were met. No action was required.

IX.) Matrix Spike (MS):

Matrix spike and matrix spike duplicate analyses were not client specified for this SDG. Based on project guidelines, no action was taken.

X.) Field Duplicates:

Two sets of field duplicate samples (NRS2009FD04-B1 / NRS2009SS17-B1 and NRS2009FD05-B1 / NRS2009SS21-B1) were identified for this SDG. There were no calculable Relative Percent Differences (RPDs). No action was required.

XI.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

XII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRDL criteria were met. No action was taken.

XIII.) Quarterly Verification of Instrumental Parameters:

All criteria were met. No action was required.

Appendix A

Qualified Form I's

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009EB01-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406812 Lab File ID: 68-12.D

Sample wt/vol: 1000 Units: ML Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/20/06 Time: 1617

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: FIELD QC Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	100	U

270606 1155

Form I

8015 DRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FB01-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406814 Lab File ID: 68-14.D

Sample wt/vol: 1000 Units: ML Date Received: 06/10/06

Concentrated Extract Volume: 1 Date Extracted: 06/15/06

Level:(low/med) LOW Date Analyzed: 06/20/06 Time: 1647

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: FIELD QC Method: 8015

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*
TPH-C1028	TPH C10-C28	100	U

270606 1155

Form I

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS16-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406801

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 95.4 Station ID: NRS2009SS16

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.37	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS17-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406802

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 98.5 Station ID: NRS2009SS17

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	4.94	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD04-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406803

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 98.3 Station ID: NRS2009SS17

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	5.7	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS18-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406804

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 95.6 Station ID: NRS2009SS18

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	5.44	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS19-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406805

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 85.4 Station ID: NRS2009SS19

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	5.71	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS20-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406806

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 83.7 Station ID: NRS2009SS20

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.18	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS21-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406807

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 83.3 Station ID: NRS2009SS21

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.3	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FD05-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406808

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 84.4 Station ID: NRS2009SS21

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.17	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS22-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406809

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 90.2 Station ID: NRS2009SS22

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	3.33			P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS23-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406810

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 89.5 Station ID: NRS2009SS23

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.2	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009SS24-B1

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: SOIL Lab Sample ID: 250406811

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 93.2 Station ID: NRS2009SS24

CONCENTRATION UNITS: MG/KG

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	0.104	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009EB02-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. SAS No: SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406813

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 0 Station ID: FIELD QC

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	1.8	U		P

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

NRS2009FB02-0606

Lab Name: PEL Laboratories, Inc. Contract: NAPR DRMO 315616.AC.FI

Lab Code : PEL Case No. _____ SAS No: _____ SDG No.: 2504068

Matrix: WATER Lab Sample ID: 250406815

Level:(low/med) LOW Date Received: 6/10/06

PercentSolids: 0 Station ID: FIELD QC

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M
7440-38-2	Arsenic	2.13	~~B~~	J	P

1B

Color Before: _____ Clarity Before: _____ Texture : _____

Color After : _____ Clarity After: _____ Artifacts: _____

Comments:

270606 1155

TBB 06.09.06

Appendix B

Validation Checklists and Example Calculations

STANDARD OPERATING PROCEDURE

Title: Evaluation of General Chemistry Data
Attachment A2: Data Assessment
(Wet Chemistry/GC Parameters)

Version: 3

Project Cits M Hill, CTO 251 / 2504068
Reviewer Amy Hogan
Fraction(s) TPH- DRO

I.) Sample Tracking	YES	NO	N/A
Sample Traffic Report			
Present?	[✓]		
Legible?	[✓]		
ACTION: If no, request from Validata Project Manager.			
Cover Page			
Present?	[✓]		
Do sample numbers on cover page agree with sample numbers on Chain-of-Custody Reports?	[✓]		
ACTION: If no for any of the above, contact Validata Project Manager.			
Chain of Custody Form			
Present?	[✓]		
Sample I.D.s - Present?	[✓]		
Sampler's Name - Present?	[✓]		
Date of Sampling - Present?	[✓]		
Date of Shipment - Present?	[✓]		
Date of Receipt at Laboratory - Present?	[✓]		

	YES	NO	N/A
Shuttle Seal Intact at Laboratory?	[ ]		✓

ACTION: If no for any of the above, contact Validata Project Manager.

II.) Analytical Results

	YES	NO	N/A
Present?	[✓]		
Detection Limits - Present?	[✓]		
Units - Present?	[✓]		
Sample Results - Present for all required compounds?	[✓]		
Matrix - Description?	[✓]		
Proper units for matrix?	[✓]		
Units - Present for all required compounds?	[✓]		
Are all "less than" values properly coded?	[✓]		

ACTION: If no for any of the above, prepare Telephone Memorandum and contact the laboratory for corrected data.

III.) Holding Times

Holding Times - (Examine Chain of Custody Form)

	YES	NO	N/A
Were all holding times met (See holding time reference sheet)?	[✓]		

ACTION: If no, flag all associated data as estimated (J or UJ). In the case holding times are grossly exceeded (>2X the holding time limit), flag non-detect data as rejected (R), and positive results as estimated (J).

IV.) Calibration	YES	NO	N/A
Is record of Calibration present?	[✓]	—	—
Are Calibration results within acceptance limits?	[✓]	—	—
Were all sample concentrations within the established calibration curve?	[✓]	—	—

ACTION: If no, flag associated positive sample results as estimated (J).

V.) Blanks			
Was a preparation blank run for each analytical batch?	[✓]	—	—
Were initial and continuing calibration blanks analyzed?	[✓]	—	—

ACTION: If no, flag associated positive sample results as estimated (J).

Do any blanks have reported concentrations greater than the Instrument Detection Limit ?	—	[✓]	—

ACTION: If yes, flag associated positive sample results less than 5X the blank amount as undetected (U), with the detection limit being raised to the level of contamination in the sample.

VI.) Laboratory Control Sample Analysis			
Was an LCS analyzed for every 20 samples, when required?	[✓]	—	—

ACTION: If no, flag associated data as estimated (J) or (UJ).

Were LCS percent recoveries between ~~80-120%~~ method limits?	[✓]	—	—

ACTION: If LCS percent recoveries were below 80%, flag associated positive and non-detect results as estimated (J) and (UJ). If recoveries were above 120%, flag only associated positive data as estimated (J).

	YES	NO	N/A
VII.) Matrix Spike Analysis			
Was a Matrix Spike sample analyzed for every 20 samples?	[ ]		✓
Were MS/MSD results within 75 - 125%?	[ ]		
ACTION: If no, use professional judgment to qualify the data.			
VIII.) Laboratory Duplicate Sample Analysis			
Was a Laboratory Duplicate sample analyzed for every 20 samples where required?	[ ]		✓
Were Duplicate results within established QC limits (± 20% waters, ±35% soils for results >5XCRDL, CRDL (±2XCRDL soils) when one or both duplicates are <5XCRDL)?	[ ]		
ACTION: If no, qualify the associated positive and non-detect data as estimated (J) and (UJ).			
IX.) Field Duplicates			
Are field duplicates identified?	[ ]	✓	
ACTION: If so, calculate the Relative Percent Difference. Make a note in the Data Acceptability Narrative.			
X.) Transcription/Calculation			
Do reported sample results and detection limits match calculations performed using the raw data?	✓		
ACTION: If no, contact the Validata Project Manager.			
Are there any other transcription/calculation errors (spot check 10% of calculations)?		✓	
ACTION: If yes, contact the Validata Project Manager.			

XI.) Surrogate Recovery (Organics Only)

	YES	NO	N/A
Were the correct surrogates analyzed?	[✓]	___	___
Were surrogate results with in the acceptance limits?	[✓]	___	___

ACTION: If no, the associated data may be qualified. If low recoveries are obtained, flag associated positive results and quantitation limits as estimated (J and UJ). If high recoveries are obtained, flag positive detections only as estimated (J). If the surrogate recovery is less than 10%, flag all associated positive results as estimated, and associated non-detects as rejected (R). Professional judgment should be used to determine if additional or alternate action is appropriate.

XII.) Internal Standard Recovery (Organics Only)

Were the correct Internal Standards analyzed?	[___]	___	✓
Were Internal Standard area counts within -50% to +100% of the associated standard?	[___]	___	___

ACTION: If IS area counts are below -50%, qualify positive results and non-detects associated with that IS as estimated (J and UJ). If area counts are above +100%, flag positive detections only associated with that IS as estimated (J). If area counts are less than 25%, flag all associated positive results as estimated, and associated non-detects as rejected (R).

XIII.) Compound Identification (GC Only)

Were all reported positive detections within appropriate retention time windows?	[✓]	___	___

	YES	NO	N/A
ACTION: If no, examine the chromatogram to see if there are other peaks near the compound of interest that may be interfering with the signal. If no, qualify the compound as not detected.			
Was GC/MS confirmation performed when required?	[ ]		✓
ACTION: If no, contact the Validata Project Manager.			
Are quantitation limits affected by large, off-scale peaks?		[✓]	
ACTION: If yes, flag the affected results as unusable (R). If the interference is on-scale, the reviewer can provide an estimated quantitation limit (UJ) for each affected compound.			

NOTE: Single-peak compound results should be checked for rough agreement between quantitative results obtained on the two GC columns. The reviewer should use professional judgment to decide whether a much larger concentration obtained on one column versus the other indicates the presence of an interfering compound. If an interfering compound is indicated, the lower of the two values should be reported and qualified as an estimated quantity (NJ).This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has obscured the attempt at a second column confirmation.

STANDARD OPERATING PROCEDURE

Title: Evaluation of Metals Analyses
Attachment B2: Data Assessment
(Total Review-Metals)

Version: 3.8
SOW: SW-846 6010B
SOP: NFG Feb. 1994

Project CH2M Hill CTO-25 / 2504048

Reviewer Amy Hogen

		YES	NO	N/A
B2.1 Chain-of-Custody -	Present or on file?	[✓]	—	—
	Legible?	[✓]	—	—
B2.2 Cover Page - Present?		[✓]	—	—

ACTION: If no, contact the Validata Project Manager.

Do sample numbers on Chain-of-Custody (C-O-C) agree with sample numbers on:

(a) Cover page?	[✓]	—	—
(b) Form I's?	[✓]	—	—
(c) Validata Sample Identification Summary (if used)?	[ ]	—	✓

ACTION: If no for any of the above, contact the Validata Project Manager.

B2.3 Form I (Final Data) -Are all Forms I's present and complete?	[✓]	—	—

ACTION: If no, contact the Validata Project Manager.

Are correct units (ug/L for water samples and mg/kg for soil samples) indicated in Form I's?	[✓]	—	—
Are sample results for each parameter corrected for percent solids on soils?	[✓]	—	—
Are all "less than" values properly coded with "U"?	[✓]	—	—

ACTION: If no for any of the above, contact the Validata Project Manager.

Was a brief physical description of samples given in the comments section?	[ ]	✓	—

	YES	NO	N/A
ACTION: If no for any of the above, note under "Overall Assessment" in the Data Validation Narrative.			
B2.4 Holding Times (C-O-C vs. data package) - Aqueous (apply to soil matrix at reviewer's discretion): If criteria other than water criteria are used for soil samples, comment in data review narrative.			
Metals (6 months), PH < 2 exceeded?	—	✓	—
ACTION: Prepare a list of all samples and analytes for which holding times have been exceeded. Specify the number of days from collection date to the analysis date (from raw data). If holding times have been exceeded, flag all results as estimated (J) and (UJ). If a gross exceedance in holding times exists (holding times are more than 2X the above limits) or professional judgement indicates, reject (R) values less than IDL.			
B2.5 Raw Data (*Weights, dilutions and volumes used to obtain values.)			
Digestion Log* (CLP Form XIII) for flame AA/ICP present?	✓	—	—
Percent solids calculation present for soil (sediments)?	✓	—	—
Are preparation dates present on Digestion Log?	✓	—	—
ACTION: If no for any of the above, contact the Validata project Mananger.			
B2.5.1 Raw Data –			
Measurement read out record present for ICP?	✓	—	—
B2.5.2 Are all raw data to support all sample analyses and QC operations present?	✓	—	—
Legible?	✓	—	—
Properly Labeled?	✓	—	—
ACTION: If no for any of above, contact the Validata Project Manager.			
B2.5.3 Is record of at least 2 point calibration present for ICP?	✓	—	—

	YES	NO	N/A
ACTION: If no for any of the above (section B2.5.4), contact the Validata Project Manager.			
B2.6 Data Validation and Verification			
B2.6.1 Form II (Initial and Continuing Calibration Verification) -			
B2.6.1.2 Are all calibration standards (initial and continuing) within controls limits?			
Metals 90-110%	✓	—	—
Are all calibration standards (initial and continuing) within 50-150%?	✓	—	—
If no, are any recoveries:			
a. between 75-89%?	—	[ ]	—
b. or between 111-125%?	—	[ ]	—
ACTION: For high recoveries as in "b" above, flag as estimated (J) all positive data, and for low recoveries in "a" above, flag positive data and data <IDL as estimated (UJ) analyzed between the standard with the above recovery and the nearest calibration standard.			
Are any recoveries:			
c. less than 75%?	—	✓	—
ACTION: If yes, reject (R) as unacceptable the positive data for which standard is the nearest adjacent standard. Flag the associated non-detects as estimated (UJ). Are any recoveries:			
d. greater than 125%?	—	✓	—
ACTION: If yes, reject (R) as unacceptable positive results for which standard is the nearest adjacent standard.			
Was continuing calibration performed every 10 samples or every 2 hours?	✓	—	—
ACTION: If no, flag the excess sample data (eleventh and up) as estimated (J) or (UJ).			
B2.6.1.3 Was a CRI standard for ICP (at 2X CRDL or IDL, whichever is greater)) run at the beginning of the sample run, but not before ICV and at least once during each 8-hour period (exemptions: Al, Ba, Ca, Fe, Mg, Na and K)?	[ ]	—	✓

	YES	NO	N/A
ACTION: If no, comment in narrative. Use professional judgment to qualify the data.			
Were the CRI %R's within the 80-120% QC limits?	[ ]	—	—
ACTION: If no, flag as estimated (UJ) and (J) all non-detect results and all positive results up to 3X CRDL, for which the CRI standard was the nearest adjacent CRI standard.			
B2.6.2 Form III (Initial and Continuing Calibration Blanks) **Note: Do not use a blank value to qualify data as undetected (U) if that blank was rejected for any reason.**			
B2.6.2.1 Present and complete?	[✓]	—	—
ACTION: If no, contact the Validata project manager.			
B2.6.2.2 Are all calibration blanks < Contract Required Detection Limits (CRDL)?	[✓]	—	—
Are all calibration blanks less than Instrument Detection Limit (if IDL > CRDL)?	[✓]	—	—
ACTION: If no for any of above, make a table of the highest calibration blank value for each analyte on Data Summary Sheet. Flag as undetected (U) on Form I's throughout the SDG all results greater than IDL but less than 5X the highest blank amount.			
Did any calibration blanks have negative results with absolute values greater then the IDL/CRDL?	—	[✓]	—
ACTION: If yes, make a table of the highest calibration blank absolute value for each analyte on Data Summary Sheet. Flag as estimated (UJ) and (J) on Form I's throughout the SDG all non-detects and all results greater than IDL but less than 5X the highest blank amount for that analyte.			
B2.6.2.3 Was an initial calibration blank analyzed?	[✓]	—	—
Was a continuing calibration blank analyzed after every 10 samples or every 2 hours (whichever is more frequent)?	[✓]	—	—
ACTION: If no, flag as estimated (J) all positive results for sample not analyzed within 5 samples of a calibration blank.			
B2.6.2.4 Does the concentration of any blank fall below IDL, other than as noted in section B2.6.2.2?	—	[✓]	—

	YES	NO	N/A
ACTION: If yes, use professional judgement to qualify the data.			
B2.6.3 Form III (Preparation Blank) **Note: Do not use a blank value to qualify data as undetected (U) if that blank was rejected for any reason.**			
B2.6.3.1 Was one Prep. blank analyzed for: each 20 samples:	✓	—	—
each batch?	✓	—	—
each matrix type?	✓	—	—
ACTION: If no for any of the above, flag as estimated (J) all associated positive results for which a Prep. blank was not analyzed. (NOTE: If only one blank was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated.)			
B2.6.3.2 Do concentrations of Prep. blank fall below IDL when IDL is greater than CRDL?	✓	—	—
ACTION: If no, include the highest valuein the table generated for section B2.6.2.2 and flag as undetected (U) all associated results greater than IDL but less than 5X the preparation blank amount.			
Do any Prep. blanks have negative results with absolute values greater then the IDL/CRDL?	—	✓	—
ACTION: If yes, include in the table for section B2.6.2.2 the highest Prep. blank absolute value for each analyte. Flag as estimated (UJ) and (J) on Form I's all associated non-detects and all results greater than IDL but less than 5X the highest blank amount for that analyte.			
B2.6.3.3 Is the concentration of the Prep. blank greater than the CRDL when IDL is less than CRDL?	—	✓	—
If yes, is the concentration of the sample with the lowest positive detection of that analyte less than 5 times the Prep. blank value?	—	✓	—
ACTION: If yes, flag as estimated (J) all associated positive data that has a concentration of less than 5 times the Prep. blank value, but not previously flagged as undetected (U).			

	YES	NO	N/A
B2.6.3.4 Does the concentration of the Prep. blank fall below the IDL?	—	[✓]	—

ACTION: If yes, use professional judgement to qualify the data.

B2.6.4 Form I (Field/Equipment /Rinsate Blank)
Note: Do not use a blank value to qualify data as undetected (U) if that blank was rejected for any reason.

	YES	NO	N/A
Do concentrations of field blanks fall below IDL for all aqueous and soil parameters?	[✓]	—	—
If no, was field blank value already rejected due to another QC criterion?	[✓]	—	—

ACTION: If no, flag as undetected (U) all aqueous and soil/sediment data (except field blank) that have a concentration less than five times the field blank value not flagged with a "U" (less than).

	YES	NO	N/A
B2.6.4.1 Was one field blank analyzed for each 20 samples or each sampling trip, whichever is greater?	[✓]	—	—

ACTION: If no, comment in the Data Validation Narrative.

B2.6.5 Form IV (ICP Interference Check Sample)

	YES	NO	N/A
B2.6.5.1 Present and complete for each sample analysis run or twice per 8 hour shift, whichever is more frequent (NOTE: The ICS should **not** be run before the Initial Calibration Verification)?	[✓]	—	—
B2.6.5.2 Are any results >IDL for analytes which were not present in the ICS solution?	—	[✓]	—

ACTION: If yes, flag as estimated (J) the positive results for that analyte in samples with comparable or higher levels of Al, Ca, Fe or Mg. Comment in the Data Validation Narrative that false positives may exist.

	YES	NO	N/A
Are any negative results with absolute values >IDL observed for analytes which were not present in the ICS solution?	—	[✓]	—

ACTION: If yes, flag as estimated (UJ) the non-detect results for that analyte in samples with comparable or higher levels of Al, Ca, Fe or Mg. Comment in the Data Validation Narrative that false negatives may exist.

	YES	NO	N/A
B2.6.5.3 Are any Interference Check Sample results outside of control limits (± 20%)?	—	[✓]	—
If yes, is ICS recovery between 50-79% of mean value?	—	[✓]	—
ACTION: If yes, flag as estimated (J) and/or (UJ) associated sample results.			
Is ICS recovery above 120%?	—	[✓]	—
ACTION: If yes, flag all positive results as estimated (J).			
Is ICS recovery less than 50%?	—	[✓]	—
ACTION: If yes, reject (R) associated sample results.			
B2.6.6 Form IX (ICP Serial Dilution Analysis)			
B2.6.6.1 Was Serial Dilution analysis performed for sample results greater than 50X IDL for:			
each 20 samples?	[✓]	—	—
each matrix type?	[✓]	—	—
each concentration range (i.e. low, med., high)?	[✓]	—	—
ACTION: If no, flag all associated data as estimated (J) for which Serial Dilution Analysis was not performed.			
B2.6.6.2 Was field blank(s) used for Serial Dilution Analysis?	—	[✓]	—
If yes, was field blank described as such on the Chain-of-Custody Report?	—	[✓]	—
ACTION: If yes, flag all associated data >50 X IDL as estimated (J).			
B2.6.6.3 Are all ICP Serial Dilution results within control limits of 10% for sample results at least 50 X IDL?	[✓]	—	—
ACTION: If no, flag as estimated (J) all associated positive sample results for which percent difference is greater than 10%. If evidence of negative interference exists, use professional judgement to qualify the data. Flag data throughout the same matrix of the Sample Delivery Group (SDG).			

	YES	NO	N/A
B2.6.7 Form V (Spike Sample Recovery) [Note: Not required for Ca, Mg, K, and Na (both matrices), Al, and Fe (soil only)].			
B2.6.7.1 Present and complete for:			
each 20 samples?	[ ]	✓	—
each matrix type?	[ ]	—	—
each conc. range (i.e. low, med., high)?	[ ]	—	—
ACTION: If no for any of the above, flag as estimated (J) all data for which a spiked sample was not analyzed. (NOTE: If one spiked sample was analyzed for more than 20 samples, then the first 20 samples analyzed do not have to be flagged as estimated). See Client memo			
B2.6.7.2 Was a field blank used as the spiked sample?	—	[ ]	✓
If yes, was field blank described as such on the Chain-of-Custody Report?	—	[ ]	—
ACTION: If yes, flag all positive data as estimated (J) for which a field blank was used as the spiked sample.			
B2.6.7.3 Are all recoveries within 75-125% control limits?	[ ]	—	—
If no: A.) Is sample concentration greater than four times the spike concentration?	—	[ ]	—
ACTION: If yes, do not flag data based on spike recoveries for analytes whose concentrations are greater than four times the spike added. Consider only those analytes on Form V for which sample concentration was <4X the spike concentration.			
Are any spike recoveries:			
a). less than 30%?	—	[ ]	—
ACTION: If yes, reject (R) all sample results <IDL; flag results >IDL as estimated (J).			
b). between 30-74%?	—	[ ]	—
ACTION: If yes, flag all sample results >IDL as estimated (J); flag all results <IDL as estimated (UJ).			
c). greater than 125%?	—	[ ]	—

	YES	NO	N/A
ACTION: If yes, flag all sample results of the same matrix type for the analysis >IDL as estimated (J).			
B.) Was a post digestion/post-distillation spike performed when the pre-distillation/pre-digestion spike did not meet criteria, even if the sample concentration was > 4X the original spike concentration?	[_]	—	—
ACTION: If no, comment in the Data Validation Narrative, but do not flag data > 4X the spike amount.			
B2.6.8 Form VI (Lab Duplicates)			
B2.6.8.1 Present and complete for:			
each 20 samples?	[_]	—	✓
each matrix type?	[_]	—	—
each concen. range (i.e. low, med., high)?	[_]	—	—
ACTION: If no for any above, flag as estimated (J) all data > CRDL for which duplicate sample was not analyzed. Note: If one duplicate sample was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			
B2.6.8.2 Are all values on the Data Summary Sheet within the control limits (20% for aqueous, 35% for soil) for sample and duplicate values >5X CRDL?	[_]	—	—
ACTION: If no, flag as estimated (J) and/or (UJ) all associated sample data of the same matrix.			
B2.6.8.3 Was a field blank used for duplicate analysis?	—	[_]	—
If yes, was field blank identified as such on the Chain-of-Custody Report?	—	[_]	—
ACTION: If yes, flag all data >CRDL as estimated (J) for which field blank was used as a duplicate.			
B2.6.8.4 Aqueous Samples			
Is any difference between sample and duplicate greater than CRDL where sample and/or duplicate is less than 5 times CRDL but greater than CRDL?	—	[_]	—
ACTION: If yes, flag as estimated (J) and/or (UJ) all associated data.			

	YES	NO	N/A
B2.6.8.5 Soil/Sediment			
Is any difference between sample and duplicate greater than 2 times CRDL where sample and/or duplicate is less than 5 times CRDL but greater than CRDL?	—	[ ]	—

ACTION: If yes, flag as estimated (J) and/or (UJ) all associated data.

B2.6.9 Field Duplicates

B2.6.9.1 Were field duplicates analyzed and identified as such?	[✓]	—	—

ACTION: If yes and the pairs are identifiable, prepare a summary table for each sample/duplicate pair in the Data Validation Narrative. Calculate RPD where both balues are greater than CRDL.

B2.6.9.2 Advisory control limits:

Aqueous Samples: 30% RPD or CRDL
Soil Samples: 60% RPD or CRDL

Are all values within control limits?	[✓]	—	—

ACTION: If no, flag the associated positive results as estimated (J), and note exceedances in the Data Validation Varrative.

B2.6.10 Form VII (Instrument Detection Limits) -

B2.6.10.1 Are IDL's present for all analytes?	[✓]	—	—
for both AA and ICP when both are used for same analyte?	[✓]	—	—

ACTION: If no for any of the above, contact the Validata project manager, who will contact the laboratory.

B2.6.10.2 Is IDL greater than CRDL for any analyte?	—	[✓]	—

If yes, make a note in the data validation narrative.

B2.6.11 Form VII (Laboratory Control Sample)

B2.6.11.1 Was one LCS prepared and analyzed for: every 20 water samples?	[✓]	—	—
every month for solid samples?	[✓]	—	—

ACTION: If no for any of the above, contact the Validata Project Manager for submittal of LCS results.

	YES	NO	N/A
Flag as estimated (J) all aqueous data for which LCS was not analyzed.			
NOTE: If only one LCS was analyzed for more than 20 samples, then the first 20 samples closest to the LCS do not have to be flagged as estimated.			
Aqueous LCS			
B2.6.11.2 Are all LCS values on Data Summary Sheet within the 80-120% control limits?	[✓]	—	—
If no, is any LCS value:			
less than 50%?	—	[✓]	—
ACTION: If yes, reject (R) all associated data.			
between 50% and 79%?	—	[ ]	—
ACTION: If yes, flag all associated data <IDL as estimated (UJ).			
greater than 120%?	—	[ ]	—
ACTION: If yes, flag all positive results (i.e. not flagged with a "U") as estimated (J).			
Soil LCS			
Are any recoveries outside the 80-120% QC limits?	—	[✓]	—
ACTION: If any recoveries are above the 80-120% QC limits, flag associated positive data as estimated (J). If recoveries are below QC limits, flag associated positive and non-detect results as estimated (J) and (UJ).			
B2.6.11.3 Is "NC" reported for any analyte in % R column of Form VII?	—	[ ]	—
If yes, does concentration of the analyte fall within acceptable range of LCS?	[ ]	—	—
ACTION: If no, flag associated data as estimated (J).			
B2.6.12 Dissolved Inorganics (only if client requested)			
B2.6.12.1 Were any analyses performed for dissolved as well as total analytes on the same sample?	—	[ ]	[✓]

	YES	NO	N/A
If yes, apply the following questions only if both dissolved and total constituents are above CRDL (For SAS parameters: above 5 X IDL).			
B2.6.12.2 Is the concentration of any dissolved analyte greater than its total concentration by more than 15% (See Appendix A for formula)?	—	[ ]	—
ACTION: If yes, prepare a list comparing differences between all dissolved and total analytes. Compute the differences as a percent of the total analyte only when both are above CRDL (5 X IDL for SAS parameters). If %D is more than 15%, flag both dissolved and total values as estimated (J).			
B2.6.13 Forms I to IX - Sample Result, Calculation/ Transcription Verification			
B2.6.13.1 Site sample number?	[✓]	—	—
Lab ID sample number?	[✓]	—	—
QC report number?	[✓]	—	—
date?	[✓]	—	—
correct units?	[✓]	—	—
matrix?	[✓]	—	—
ACTION: If no for any of above, note under contract problem/non-compliance section of Data Assessment Narrative.			
B2.6.13.2 Perform a 10% spot check of all types of computation/transcription for Forms I-IX. Are there any transcription/computation errors for analytes analyzed by ICP?	—	[✓]	—
ACTION: If yes, perform a 100% check of the remaining data for the computation or transcription found to be in error and document any other errors found. Contact the Validata Project Manager.			
B2.6.14 Forms XI, XII, XIII (Quarterly Verification of Instrumental Parameters)			
B2.6.14.1 Is quarterly verification report present or on file for:			
Instrument Detection Limits?	[✓]	—	—
ICP Interelement Correction Factors?	[✓]	—	—

	YES	NO	N/A
ICP Linear Ranges?	[✓]	—	—

ACTION: If no, contact the Validata Project Manager.

B2.6.14.2 Was any sample result higher than the linear range of the ICP by more than 10%?	—	[✓]	—
Was any sample result higher than the highest calibration standard for non-ICP parameters?	—	[✓]	—
If ICP was used to analyze As, Tl, Se or Pb, was any result <5X ICP IDL reported?	—	[✓]	—

ACTION: If yes for any of the above, flag result reported on Form I as estimated (J) and (UJ).

B2.6.15 Examine the raw data for any anomalies (i.e., baseline shifts, negative absorbances, omissions, legibility, etc). Are any anomalies present?	—	[✓]	—

ACTION: If yes, use professional judgement to qualify the data. Contact the Validata Project Manager for resubmissions if necessary.

B2.6.16 <u>Overall Assessment of Data/General</u>

After all other data qualification is completed, are any laboratory flags remaining (other than U, J, or R)?	—	[✓]	—

ACTION: If yes, cross out (remove) the remaining lab flags, unless project-specific memo states otherwise.

Were any samples reanalyzed?	—	[✓]	—

ACTION: If yes, comment in Data Validation Narrative as to which sample analysis is considered to be of preferable data quality.

Evaluate in this section any technical problems which have not been previously addressed.

Assess the overall quality of the data. Consider the additive nature of the analytical problems encountered and make recommedations for further data qualification when appropriate.

Comment briefly on the analytical limitations of the data, incorporating project-specific considerations when sufficient information is available. Include a summary of rejected ("R" flagged) data.

APPENDIX C

Data Quality Evaluation

Data Quality Evaluation (DQE) for Phase II Closure Sampling and Analysis Activities, DRMO, NAPR

TO: Project File

FROM: Kevin A. Sanders/GNV

DATE: August 28, 2006

Introduction

The purpose of this data quality evaluation (DQE) technical memorandum (TM) is to present the findings of the data validation performed on the samples collected as part of the Phase II closure sampling and analysis activities performed relative to Building 2009, and former Buildings 2009A, 2009B, 2009C, and 2009D, Defense Reutilization and Marketing Office (DRMO), Naval Activity Puerto Rico (NAPR).

The DQE process is designed to assess the effect of the overall analytical process on the usability of the data. The two major categories of data evaluation are laboratory performance and matrix interferences. Evaluation of laboratory performance is a check for compliance with the method requirements; either the laboratory did, or did not, analyze the samples within the limits of the analytical method. Matrix interferences are evaluated through several quality control measurements and their subsequent statistical results. Specific QC measurements, as part of the overall QA process, included but were not limited to the analysis of surrogate and matrix spikes, and field duplicate sample results.

These samples were collected from June 6th through the 9th, 2006. Field QC samples collected included field duplicates, and single field and equipment rinsate blanks. The number of each type of sample is listed by analytical method in **Exhibit 1**. The samples were analyzed for the following analytical fractions:

- Metals by SW-846 method 6010B (ICPES)
- Non-halogenated Volatile Organics (TRPH) C10-C28 by SW-846 method 8015E

Before the analytical results were released by the laboratory, both the sample and QC data were carefully reviewed to verify sample identity, instrument calibration, detection limits, dilution factors, numerical computations, accuracy of transcriptions, and chemical interpretations. Additionally, the QC data were reduced and the resulting data were reviewed to ascertain whether they were within the laboratory-defined limits for accuracy and precision. Any non-conforming data were discussed in the data package case narrative. **Exhibit 2** presents the frequency of detection of target analytes for field samples.

The hardcopy data packages were reviewed by Validata Chemical Services, Inc., applying the review criteria detailed in the U.S. Environmental Protection Agency (EPA) Region 2

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checklists which are based upon *National Functional Guidelines for Evaluating Inorganic Analyses* (EPA, 1994) and *National Functional Guidelines for Organic Data Review* (EPA, 1999).

Areas of review included (when applicable to the method) holding time compliance, calibration verification, blank results, matrix spike precision and accuracy, method accuracy as demonstrated by laboratory confirmation samples (LCSs), field duplicate results, surrogate recoveries, internal standard performance, and interference checks. An EPA Region 2 data review workbook was completed for each data package and any non-conformances were documented. This data review and validation process is independent of the laboratory's checks and focuses on the usability of the data to support the project data interpretation and decision-making processes.

Data that were not within the acceptance limits were appended with a qualifying flag, which consists of a single or double-letter abbreviation that indicates the nature of the identified non-conformance. These also include secondary, multi-digit "sub-qualifier" flags, which are entered into the "DV Notes" field of the database. The secondary qualifiers provide the reasoning behind the assignment of a qualifier to the data. The sub-qualifiers are presented and defined in **Exhibit 3.** The following primary flags were used to qualify the data:

- **U -** Undetected. Analyte was analyzed for but not detected above the method detection limit.
- **UJ -** Detection limit estimated. Analyte was analyzed for, and qualified as not detected. The result is estimated.
- **J -** Estimated. The analyte was present, but the reported value may not be accurate or precise.
- **R -** Rejected. The data are unusable. (NOTE: Analyte/compound may or may not be present.)

Numerical sample results that are greater than the method detection limit (MDL) but less than the laboratory reporting limit (RL) are qualified with a "J" as an estimated value.

The entire database was queried for frequency of detection in blanks and samples, detailed listing of blank detects, matrix spike/matrix spike duplicate (MS/MSD) results, field duplicate precision, surrogate recoveries, preparation and analysis dates pertaining to holding times. The queries were then manipulated to calculate necessary statistics for evaluation of the data.

Once the data review and validation process was completed, the entire data set was reviewed for analyte frequencies of detection, dilution factors that might affect data usability, and patterns of target analyte distribution. The data set was also evaluated to identify potential data limitations, uncertainties, or both in the analytical results. All of the data records that have been qualified through the validation process are presented in **Exhibit 4.**

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Holding Times

The holding times for each parameter were evaluated according to SW-846 requirements. All samples were analyzed within holding times and no qualification flags were applied.

Calibration

The calibration criteria for the analytical methods used in this sampling event were evaluated for compliance requirements. This evaluation ensures that the laboratory is capable of producing acceptable qualitative and quantitative data for target compounds. No records were qualified due to calibration deficiencies.

Potential Field Sampling and Laboratory Contamination

Three types of blank samples were used to monitor potential contamination introduced during field sampling, sample handling, shipping activities, and sample preparation and analysis in the laboratory. Types of blank samples included:

- **Field Blank or Ambient Blank (FB or AB)**: A field blank is the source water used for equipment decontamination. This blank monitors contamination that may be introduced from the water used for decontamination. One field blank is collected from each source of decontamination water and analyzed for the same parameters as the associated samples. A single ambient blank was collected for this sampling effort.
- **Equipment Rinsate Blank (ERB)**: A sample of the target-free water (ambient blank) used for the final rinse during the equipment decontamination process. This blank sample is collected by rinsing the sampling equipment after decontamination and is analyzed for the same analytical parameters as the corresponding samples. This blank is used to monitor potential contamination caused by incomplete equipment decontamination. One equipment rinsate blank should be collected per day of sampling, per type of sampling equipment. A single equipment rinsate blank was submitted to the laboratory for this field effort.
- **Laboratory Method Blank or Method Blank (LB or MB)**: A laboratory method blank is ASTM Type II water that is treated as a sample in that it undergoes the same analytical process as the corresponding field samples. Method blanks are used to monitor laboratory performance and contamination introduced during the analytical procedure. One method blank was prepared and analyzed for every 20 samples or per analytical batch, whichever was more frequent.

According to the EPA Region 2 Checklist and *Functional Guidelines*, concentrations of common organic contaminants detected in samples at less than 10 times the concentration of the associated blanks can be attributed to field sampling and laboratory contamination rather than environmental contamination from site activities. Common organic contaminants include acetone, methylene chloride, 2-butanone, and the phthalates. For other organic and inorganic contaminants, five times the concentration detected in the associated blanks (rather than 10 times rule) is used to qualify results as potential field and/or laboratory contamination rather than environmental contamination. Detects in the

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samples at levels less than the action levels (five or 10 times rule) would be qualified as not detected (U). No field samples associated with this effort were qualified due to blank contamination.

Matrix Effects

Surrogate Spike Recovery

Surrogate spike compounds were added to every sample analyzed for the organic parameters including field and laboratory blanks as well as field environmental samples. Surrogate spikes consist of organic compounds which are similar to the method targets in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

Surrogate spike recoveries were used to monitor both laboratory performance and matrix interferences. Surrogate spike recoveries from field and laboratory blanks were used to evaluate laboratory performance because the blanks should represent an "ideal" sample matrix. Surrogate spike recoveries for field samples were used to evaluate the potential for matrix interferences. Volatile data are qualified with respect to surrogate recoveries when one or more volatile surrogates are out of specifications.

Two TRPH samples were qualified as estimated "J" due to high surrogate recoveries and two other TRPH samples (non-detects) were qualified as estimated "UJ" due to low surrogate recoveries. Globally, these data indicate that the matrix did not influence the overall analytical process or the final numerical sample result.

Matrix Spike/Matrix Spike Duplicate Precision and Accuracy

A matrix spike is an aliquot of sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. For the MS/MSD measurement, three aliquots of a single sample are analyzed; one native sample and two additional native aliquots spiked with target analytes or compounds. Matrix accuracy is evaluated from the spike recoveries, while matrix precision is evaluated from comparison of the percent recoveries of the MS and MSD.

Organic results are not qualified upon the results of MS/MSD results alone. Evaluation is in conjunction with surrogate, LCS, and internal standard (if applicable) results. Additionally, many MS/MSD samples require dilution and thus the spike compounds added are diluted out and unable to be evaluated.

Inorganic results may be qualified solely upon the results of the MS/MSD precision and accuracy. Instances where the native sample concentration for a given element exceeds the spike added concentration by a factor of four or more are not evaluated as the spike added would be masked by the native concentration. Metals recoveries of greater than 30 percent and outside the 75 to 125 percent recovery control limits are required to be flagged as estimated, "J". Samples that were reported as non-detects (U) with spike recoveries between 30-75% are required to be estimated as "UJ". Precision requirements for soils are set at 35 relative percent difference (RPD).

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Sixteen arsenic results were qualified as estimated (4 as "J", and 12 as "UJ") for low matrix spike recoveries. The overall MS/MSD data set demonstrated that accuracy and precision results were well within established criteria and that the specific sample matrix did not influence the analytical process or the final numerical sample result.

Serial Dilution Results

Serial dilutions are performed on method 6010B target analytes (metals). A sample is chosen which has some quantitated results at least 50 times the MDL. The sample is diluted 1+4 (5X) and the diluted result (multiplied times five) is compared to the original sample result. If the percent difference (%D) is greater than 10 %D, a matrix interference is suspected and the results are qualified as estimated. There were no samples qualified due to serial dilution statistics outside control limits.

Field Duplicate Sample Results

Three arsenic and two TRPH field duplicate sets were collected during this field effort. Both the native and duplicate samples were analyzed for the same parameters. Field duplicate analyses measure both field and laboratory precision and can also be affected by the heterogeneity of the samples.

Solid samples utilized a control limit of ± 35 RPD for original and duplicate sample values greater than or equal to five times the RL. A control limit of ± the two times the RL was used if either the sample or the duplicate value was less than five times the RL. In the cases where only one result was above the five times the RL level and the other was below, the ± 2 times the RL criteria were applied.

There were no field duplicate sets with detections that could be evaluated as described by the criteria above.

Laboratory Method Accuracy

LCSs or blank spikes (BS) are QC samples utilized to monitor laboratory method performance. This sample does not possess a difficult matrix as it consists of deionized (DI) laboratory water (or Ottawa sand) spiked with the target compounds of interest. No sample records were qualified due to LCS failure. These data reflect the fact that the laboratory's analytical processes were under control at the analysis.

Sample Results for Measurements at or Near the MDL

The MDL is defined as the minimum concentration of an analyte that can be identified, measured, and reported with 99 percent confidence that the analyte concentration is greater than zero. Sample results at or near the MDL are not accurate or precise. This situation is often caused by instrument noise or low-level background shifts rather than a true analyte signal. Accuracy and precision are further decreased when a matrix is introduced, often causing Type I (alpha) errors, or false positives. As concentrations approach a "quantitation limit," the confidence in these values increase.

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PARCCs

Precision--is defined as the agreement between duplicate results, and was estimated by comparing duplicate matrix spike recoveries, and field duplicate sample results. MS/MSD precision was documented as being within control limit criteria for all samples data. Precision could not be measured for field duplicate sample results. However, the available data indicate that the sample matrix did not interfere with the overall analytical process.

Accuracy--is a measure of the agreement between an experimental determination and the true value of the parameter being measured. For the organic analyses, each of the samples was spiked with a surrogate compound; and for organic and inorganic analyses a MS/MSD were spiked with a known reference material before preparation. Each of these approaches provides a measure of the matrix effects on the analytical accuracy. The LCS (blank spikes) results demonstrate accuracy of the method. MS/MSD results establish precision and accuracy of the matrix. Spike recoveries were within the method acceptance limits for all of the measurements. Sixteen arsenic results were estimated due to low matrix spike recoveries. No data were rejected. There was no evidence of matrix interferences that would affect the usability of the data.

Representativeness-- is a qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter and is used to evaluate the efficacy of the sampling plan design. Representativeness was demonstrated by providing full descriptions in the project scoping documents of the sampling techniques and the rationale used for selecting sampling locations.

Completeness--is defined as the percentage of measurements that are judged to be valid compared to the total number of measurements made. A goal of 90 percent usable data was established for the project. The percent completeness for all analytical fractions was **100 percent (50/50)**.

Comparability--is another qualitative measure designed to express the confidence with which one data set may be compared to another. Factors that affect comparability are sample collection and handling techniques, sample matrix type, and analytical method. Comparability is defined by the other PARCC parameters because data sets can be compared with confidence when precision and accuracy are known. Data from this investigation are comparable with other data collected at the site because only EPA methods were used to analyze the sample and EPA Level IV QC data are available to support the quality of the data.

Summary and Conclusions

Conclusions of the DQE process include:

- The laboratory analyzed the samples according to the EPA methods stated in the work plan as demonstrated by the deliverable summaries and analytical run sequences.
- The QC measurements for precision and accuracy for the method and the matrix were met and indicated no matrix interferences that would bias the final numerical result.

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All project objectives or PARCCs were met, and the data can be used in the project decision-making process as qualified by the DQE process.

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Exhibit 1 - Number of Field Samples Collected by Matrix, Method, and Type

Matrix	Analytical Method	Analytical Method Description	Preparation Method	N	FD	FB	EB
SO	SW6010B	Inductively Coupled Plasma Emission Spectroscopy	SW3050B	24	3	1	1
SO	SW8015-E	Nonhalogenated Volatile Organics (TPH C10-C28)	SW3550	21	2	1	1

Exhibit 2 - Frequency of Detection in Field Samples

Matrix	Analytical Method	Preparation Method	Parameter	Number Analyzed	Number Detected	Minimum Detected	Maximum Detected	Minimum Reporting Limit	Maximum Reporting Limit	Minimum Detection Limit	Maximum Detection Limit	Units
SO	SW6010B	SW3050B	Arsenic	27	5	1.27	3.3	0.27	1.6	0.090	0.53	mg/Kg
SO	SW8015-E	SW3550	TPH C10-C28	23	13	3.2	238	2	22.4	1.3	14.5	mg/Kg

Sub Qualifier Code	Sub Qualifier Definition	Category
0LCSD	LCSD not required. No flags applied.	Laboratory Control Sample
2SH	Second source calibration verification standard greater than the upper control limit	Calibration
2SL	Second source calibration verification standard less than the lower control limit	Calibration
ABH	Ambient blank concentration greater than the RL	Blank
ABL	Ambient blank concentration less than the RL	Blank
ABMDCH	Ambient blank concentration greater than the radionuclide MDC	Blank
CCBH	Continuing calibration blank concentration greater than the RL	Blank
CCBL	Continuing calibration blank concentration less than RL	Blank
CCC	CCC Failure	Calibration
CCVF	Continuing Calibration not analyzed at the required frequency	Calibration
CCVH	Continuing calibration recovery greater than upper control limit	Calibration
CCVL	Continuing calibration recovery less than lower control limit	Calibration
CF	Confirmation result	Confirmation
CFP	Confirmation precision exceeded	Confirmation
ChangeR	Lab R flag removed - Recovery within lab control limits	LabControlLimits
CO	Compounds were reported combined on one column	Confirmation
DL	Secondary dilution	Re-analysis
EBH	Equipment blank concentration greater than the RL	Blank
EBL	Equipment blank concentration less than the RL	Blank
EBMDCH	Equipmentent blank concentration greater than the radionuclide MDC	Blank
EC	Estimated Maximum Possible Concentration Reported	Matrix
FD	Field duplicate exceeds RPD criteria	FieldDuplicate
GEOM	Gamma-spec Geometries do not match up in analytical sequesnce	Calibration
Hetero	Matrix Heterogeneity	Matrix
HLHTC	Counting holding time exceeds half-life of radionuclide	HoldingTime
HTA	Analytical Holding Time exceeded	HoldingTime
HTP	Preparation Holding Time exceeded	HoldingTime
IB	Result between the MDL and RL (or between the MDC and RDL for nuclides)	RL
IC R2	Initial calibration exceeded the R2 for first order regression	Calibration
IC RR	Exceeds RSD criteria and initial calibration exceeded the R2 for first order regression	Calibration
IC RRF	Initial calibration relative response factor below the LCL	Calibration
IC RSD	Initial calibration RSD exceeded	Calibration
ICBH	Initial calibration blank concentration greater than the RL	Blank
ICBL	Initial calibration blank concentration less than RL	Blank
ICLS>RL	Initial calibration low std. greater than the RL	Calibration
ICSP	Single Point Initial Calibration used for Quantitation	Calibration
ICVSH	Initial calibration verification recovery greater than upper control limit	Calibration
ICVSL	Initial calibration verification recovery less than lower control limit	Calibration
INTCN	Interference cited in case narrative without supporting raw data	Interference
ISH	Internal standard response exceeded the UCL criteria	InternalStandard
ISL	Internal standard response exceeded the LCL criteria	InternalStandard
LBH	Laboratory blank (method) contamination greater than the RL	Blank
LBL	Laboratory blank (method) contamination less than the RL	Blank
LBMDCH	Laboratory (method) blank concentration greater than the radionuclide MDC	Blank
LBRC	Lab method blank re-counted to come within criteria	Blank
LCSDH	LCSD recovery greater than criteria	LaboratoryControlSample
LCSDL	LCSD recovery less than the criteria	LaboratoryControlSample
LCSH	LCS recovery greater than criteria	LaboratoryControlSample
LCSL	LCS recovery less than the criteria	LaboratoryControlSample
LCSP	LCS/LCSD RPD criteria exceeded	LaboratoryControlSample
LCSRC	LCS re-counted to bring within criteria	LaboratoryControlSample
LDP	Laboratory Duplicate Precision out	Matrix
MDCH	MDC greater than RDL and sample result less than MDC	Confirmation
MSA	Quantitated by the method of standard additions	Calibration
MSALL	Global matrix spike flagging	Matrix
MSAR2	method of standard additions R2 out	Calibration
MSDH	Matrix spike duplicate recovery criteria greater than the upper limit	Matrix
MSDL	Matrix spike duplicate recovery criteria less than the lower limit	Matrix
MSDP	Matrix Spike Duplicate RPD criteria exceedance	Matrix
MSH	Matrix spike recovery criteria greater than the upper limit	Matrix
MSL	Matrix spike recovery criteria less than the lower limit	Matrix
NMS	Not Site-specific Matrix Spike	Matrix
NotSameMatrix	Matrix inappropriately flagged	Matrix
PH	Sample pH out. Not properly preserved.	Miscellaneous
PRM	Result differs from Preliminary Result	Miscellaneous
PSH	Post spike recovery criteria greater than the upper limit	Matrix
PSL	Post spike recovery criteria less than the lower limit	Matrix
RA	Sample was reanalyzed	Re-analysis
RE	Sample was re-extracted or reanalyzed	Re-analysis

Sub Qualifier Code	Sub Qualifier Definition	Category
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
RemoveMFlag	Lab M flag removed - matrix spike/duplicate not requested in this analytical batch	Matrix
RemoveRLabflag	Lab R flag removed - surrogate not monitored in QAPP	SurrogateRecovery
ReplaceERFlag	Lab R flag removed - calibration range exceeded	Calibration
ReplaceHTRFlag	Lab R flag removed - holding time exceeded by less than 24 hrs.	HoldingTime
ReplaceISRFlag	Lab R flag removed - reanalysis confirmed matrix effect on IS	InternalStandard
ReplaceMFlag	Lab M flag removed - recovery within lab control limits	Matrix
ReplacePEHTRFlag	Lab R flag removed - PE sample	HoldingTime
ReplaceRFlag	Lab R flag removed - recovery within lab control limits	LaboratoryControlSample
ReplaceSurRFlag	Lab R flag removed - reanalysis confirmed matrix effect on surrogate	SurrogateRecovery
RES<ICLS	Sample Result or response less than Initial Calibration Low Standard	Calibration
Res<RL	Result less than the RL	RL
RES>LR	Result greater than linear calibration range	Calibration
RS	Re-sampling due to lack of volume or result not meeting RL criteia	RS
RT	Result is outside the laboratory determined retention time window	Confirmation
SCRN	Screening method and/or data	Screening
SDIL	Serial Dilution %D exceeds the upper control limit	Matrix
SPCC	SPCC Failure	Calibration
SSH	Surrogate recovery greater than upper limit	SurrogateRecovery
SSL	Surrogate recovery less than lower limit	SurrogateRecovery
SSR	Surrogate spike recovery <10%	SurrogateRecovery
TBH	Trip blank concentration greater than the RL	Blank
TBL	Trip blank concentration less than the RL	Blank
TD	Total Concentration < Dissolved Concentration	Miscellaneous
TEMP	Cooler temperature out upon arrival	Blank
TIC	Tentatively identified compound	Tentatively Identified Compound
TN	GC/MS tune does not meet criteria	Calibration
TRCRH	Nuclide Tracer / Carrier Yield high	Nuclide Tracer / Carrier
TRCRL	Nuclide Tracer / Carrier Yield high	Nuclide Tracer / Carrier
XCC	No Continuing Calibration analyzed in the analytical batch	Calibration
X-DL	Data not used due to dilution; another value is more appropriate or data was not requested	Exclude
XIC	No initial calibration analyzed in the analytical batch	Calibration
XICVS	Initial calibration verification standard was not analyzed	Calibration
XLCS	No LCS in the analytical batch	LaboratoryControlSample
XLD	Laboratory Duplicate not reported	Matrix
XMS	Matrix Spike not reported	Matrix
XMSD	Matrix Spike Duplicate not reported	Matrix
X-RE	Data not used due to reanalysis another value is more appropriate or data was not requested	Exclude

Exhibit 4 - Change in Final Qualifier through the Data Validation Process

Matrix	Sample ID	Sample Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
SO	NRS2009SS01-B1	N	SW6010B	SW3050B	Arsenic	2.28	=	=	2.28	J	J	0.11	0.33	mg/Kg	MSL
SO	NRS2009SS02-B1	N	SW6010B	SW3050B	Arsenic	2.2	=	=	2.2	J	J	0.46	1.36	mg/Kg	MSL
SO	NRS2009SS08-B1	N	SW6010B	SW3050B	Arsenic	1.27	=	=	1.27	J	J	0.09	0.27	mg/Kg	MSL
SO	NRS2009SS09-B1	N	SW6010B	SW3050B	Arsenic	3.23	=	=	3.23	J	J	0.11	0.33	mg/Kg	MSL
SO	NRS2009FD03-B1	FD	SW6010B	SW3050B	Arsenic	2.48	U	U	2.48	UJ	U	2.48	7.3	mg/Kg	MSL
SO	NRS2009SS03-B1	N	SW6010B	SW3050B	Arsenic	2.77	U	U	2.77	UJ	U	2.77	8.14	mg/Kg	MSL
SO	NRS2009SS04-B1	N	SW6010B	SW3050B	Arsenic	2.62	U	U	2.62	UJ	U	2.62	7.7	mg/Kg	MSL
SO	NRS2009SS05-B1	N	SW6010B	SW3050B	Arsenic	0.576	U	U	0.576	UJ	U	0.576	1.69	mg/Kg	MSL
SO	NRS2009SS06-B1	N	SW6010B	SW3050B	Arsenic	0.504	U	U	0.504	UJ	U	0.504	1.48	mg/Kg	MSL
SO	NRS2009SS07-B1	N	SW6010B	SW3050B	Arsenic	2.63	U	U	2.63	UJ	U	2.63	7.72	mg/Kg	MSL
SO	NRS2009SS10-B1	N	SW6010B	SW3050B	Arsenic	1.08	U	U	1.08	UJ	U	1.08	3.18	mg/Kg	MSL
SO	NRS2009SS11-B1	N	SW6010B	SW3050B	Arsenic	2	U	U	2	UJ	U	2	5.87	mg/Kg	MSL
SO	NRS2009SS12-B1	N	SW6010B	SW3050B	Arsenic	2.76	U	U	2.76	UJ	U	2.76	8.11	mg/Kg	MSL
SO	NRS2009SS13-B1	N	SW6010B	SW3050B	Arsenic	0.097	U	U	0.097	UJ	U	0.097	0.28	mg/Kg	MSL
SO	NRS2009SS14-B1	N	SW6010B	SW3050B	Arsenic	0.483	U	U	0.483	UJ	U	0.483	1.42	mg/Kg	MSL
SO	NRS2009SS15-B1	N	SW6010B	SW3050B	Arsenic	1.14	U	U	1.14	UJ	U	1.14	3.35	mg/Kg	MSL
SO	NRS2009SB18-S1	N	SW8015-E	SW3550	TPH C10-C28	188	=	=	188	J	J	1.5	2.3	mg/Kg	SSH
SO	NRS2009SB19-S1	N	SW8015-E	SW3550	TPH C10-C28	116	=	=	116	J	J	1.5	2.3	mg/Kg	SSH
SO	NRS2009SB04-S2	N	SW8015-E	SW3550	TPH C10-C28	2.7	U	U	2.7	UJ	U	1.7	2.7	mg/Kg	SSL
SO	NRS2009SB08-S2	N	SW8015-E	SW3550	TPH C10-C28	2.9	U	U	2.9	UJ	U	1.9	2.9	mg/Kg	SSL